EnergyReporter EXT

Energy Dashboard, Energy Reporting & Cost Analysis Software

Version 4.0

User Manual
V.1.03
October 29, 2014

Electro Industries/GaugeTech™
The Leader In Power Monitoring and Smart Grid Solutions™

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EnergyReporter EXT Installation and Operation Manual Version 1.03

Published by:

Electro Industries/GaugeTech

1800 Shames Drive

Westbury, NY 11590

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More than thirty years since its founding, Electro Industries/GaugeTech, the leader in power monitoring and control, continues to revolutionize the industry with the highest quality, cutting edge power monitoring and control technology on the market today. An ISO 9001:2008 certified company, EIG sets the industry standard for advanced power quality and reporting, revenue metering and substation data acquisition and control. EIG products can be found on site at mainly all of today's leading manufacturers, industrial giants and utilities.

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Table of Contents

Customer Service and Support ii

Disclaimer ii

About Electro Industries/GaugeTech ii

License Agreement for the EnergyReporter EXT Software Application iii-ix

1: Step 1 - Install the EnergyReporter EXT Application 1-1

1.1: Overview 1-1

1.2: Installing the EnergyReporter EXT Application 1-2

1.2.1: Installation Procedure 1-4

1.3: Connect to the Database Server 1-15

1.3.1: Specify the Database Server 1-15

1.4: Enter a Software License Key 1-16

1.5: Steps for Using the EnergyReporter EXT Application 1-18

2: Step 2 - Use MeterManager EXT to Automate EnergyReporter EXT 2-1

2.1: Add Meters to the Meter List Using Auto Discovery 2-1

2.2: Manually Connect to Meter 2-6

2.3: Log Retrieval through MeterManager EXT 2-9

3: Step 3 - Set Up Logging 3-1

4: Step 4 - Configure the EnergyReporter EXT Application Settings 4-1

4.1: Set Up a Provider 4-4

4.2: Set Up Rate Structures	4-8
4.3: Set Up a Customer	4-35
4.4: Set Up a Location and Add Meters to It	4-37
4.4.1: Adding a Meter Manually	4-47
4.4.2: Meter at Location Example	4-50
4.4.3: Importing External Data	4-52
5: Step 5 - EnergyReporter Dashboard Viewer	**5-1**
5.1: Accessing the EnergyReporter Dashboard Viewer	5-3
5.2: Usage Dashboard	5-7
5.3: Generating and Viewing Usage Reports	5-14
5.3.1: Executive Summary Usage Report	5-14
5.3.2: Generate Usage Reports	5-16
5.3.2.1: View Usage Reports	5-18
5.4: Generating and Viewing Customer Bills	5-20
5.4.1: Individual Bills	5-21
5.4.2: Generate Bills Manually	5-24
5.4.3: View Bills	5-27
6: Managing Data	**6-1**
6.1: View/Copy/Export Meter Data	6-1
6.1.1: Export Meters Data	6-5
6.2: Edit Data Errors	6-8
6.3: Re-Aggregate All Locations	6-11
6.4: Rebuild Period Analysis	6-11

7: Additional Features and Advanced Functions **7-1**

7.1: Viewing the Action Log 7-1

7.2: Database Maintenance 7-3

7.2.1: Database List 7-4

7.2.2: Archive Database Clusters 7-5

7.2.3: Restore Database Clusters 7-6

7.2.4: Clear Database 7-8

7.2.5: Server Status 7-9

7.2.6: DB Actions 7-10

7.3: Clear Meter Data 7-11

7.4: Option Screens 7-12

7.4.1: Path Setting 7-12

7.4.2: Configuration Setting 7-13

7.4.3: UI (User Interface) Setting 7-15

7.4.4: Language 7-16

7.5: Performing Tasks Using Command Line 7-20

7.5.1: Import Data Using Command Line 7-20

7.5.2: Generate All Bills Using Command Line 7-20

A: Sample Usage Summary Report **A-1**

Glossary **GL-1**

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1: Step 1 - Install the EnergyReporter EXT Application

1.1: Overview

The EnergyReporter EXT application is a fully customizable software application that lets you create and view an Energy Dashboard, analyze costs, and automatically generate detailed Energy usage reports and usage bills using either the Communicator EXT™ application databases or the HMI EXT™ application's polling engine (see the *HMI EXT™ User Manual* and the *Communicator EXT™ 3.0 User Manual* for additional information on these applications). The EnergyReporter EXT application was created for use with Electro Industries' Shark® 200 and 200S meters, the MP200 metering system, and all Nexus® series meters. The EnergyReporter EXT application performs complex calculations, such as multiple entity aggregation, and supports user-programmable rate and tariff structures. This robust application allows for generation, transmission, distribution, and tax charges, and can be used for steam and other commodities as well as electrical billing. It also supports detailed usage analysis in the form of usage reports and trending charts.

The EnergyReporter EXT application has three parts:

- EnergyReporter Settings Editor: the part of the application you use to set up billing, including customer and location configuration, data import, rate configuration, and correcting errors in the imported data.
- EnergyReporter Dashboard Viewer: the part of the application you use to view the Energy Dashboard, generate and view bills, view and analyze usage data, and generate and view usage reports.
- Database Server: the part of the application which provides access to the billing database.

New to EnergyReporter EXT V.4 software are the following features:

- Support from MeterManager EXT software allows for meter and logging automation and management
- Updated Dashboard layout

- Weather data added to provide weather vs. load comparisons
- Meter aggregation feature and virtual meters
- Ability to archive rate structures that have changed
- Ability to set up seasonal Fixed charges
- Ability to set up Tiered rates
- Ability to export meter's data
- New reporting capabilities
- New technical tools

1.2: Installing the EnergyReporter EXT Application

EnergyReporter EXT software can be run either as a standalone program (the databases are stored on the computer that is running the application) or in a Client/Server format (the databases are stored on the Server and the application is run on the Client PCs). Note that the Client PCs can use the Dashboard Viewer, but cannot use the Bill Settings Editor. See your System Administrator for the setup you will be using.

IMPORTANT! The EnergyReporter EXT application utilizes the MeterManager EXT automation component, which is installed as part of the Communicator EXT™ 4.0 (or higher) application. You must have a licensed version of the Communicator EXT™ 4.0 software installed on the PC that will function as the Server. The shareware (LITE) version does not have the MeterManager EXT automation component and will not work.

NOTES:

- The licensed copy of the Communicator EXT™ 4.0 application only needs to be on the Server, not the Clients, for the MeterManager EXT application to operate; however, other features, such as being able to use meter addresses other then 1, still require a Communicator EXT™ application license to be installed on the Client PCs, as well.

- The MeterManager EXT application should be configured to download log data only from the Server, not from the Clients. The Clients will read the data from the Server PC.

The EnergyReporter EXT application must be run on a computer with one of the following operating systems:

- Windows 7® Professional Operating System
- Windows 8® Professional Operating System

Refer to the diagram below for a graphical representation of the way the software modules work together.

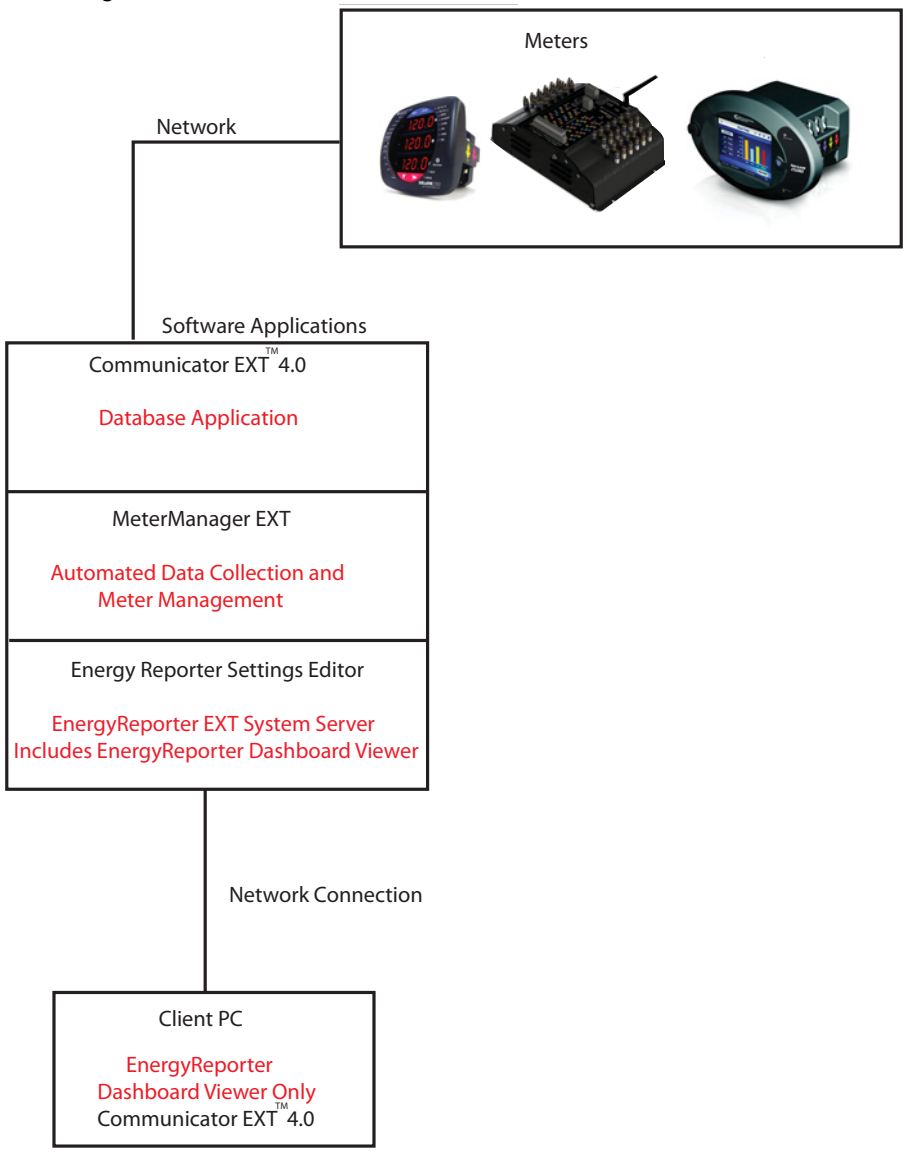


Figure 1.1: Relationship of Software Applications

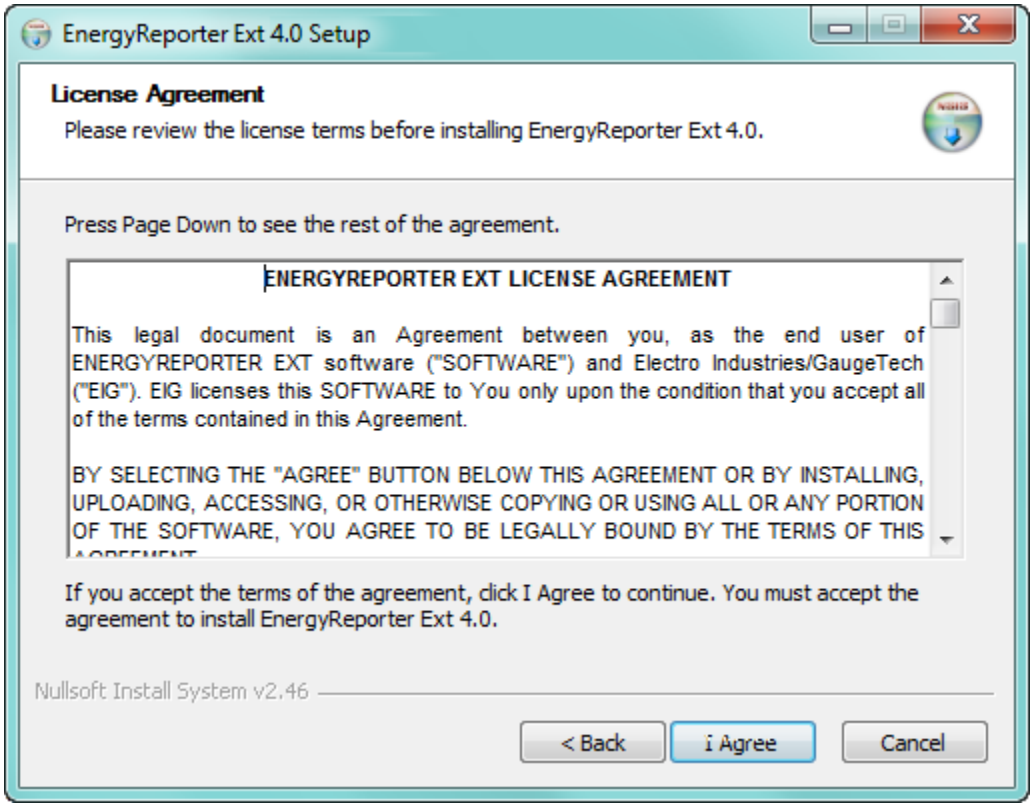
1.2.1: Installation Procedure

1. Insert the EnergyReporter EXT application's CD into your PC's CD drive. You will see the following screen in your web browser.

2. Click the Software button to open the Setup Wizard screen.

EnergyReporter Ext 4.0 Setup
Welcome to the EnergyReporter Ext 4.0 Setup Wizard
This wizard will guide you through the installation of EnergyReporter Ext 4.0.
It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.
Click Next to continue.
Next >
Cancel

3. Close any open programs and click Next. You will see the screen shown below.


EnergyReporter Ext 4.0 Setup
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Please review the license terms before installing EnergyReporter Ext 4.0.
Press Page Down to see the rest of the agreement.
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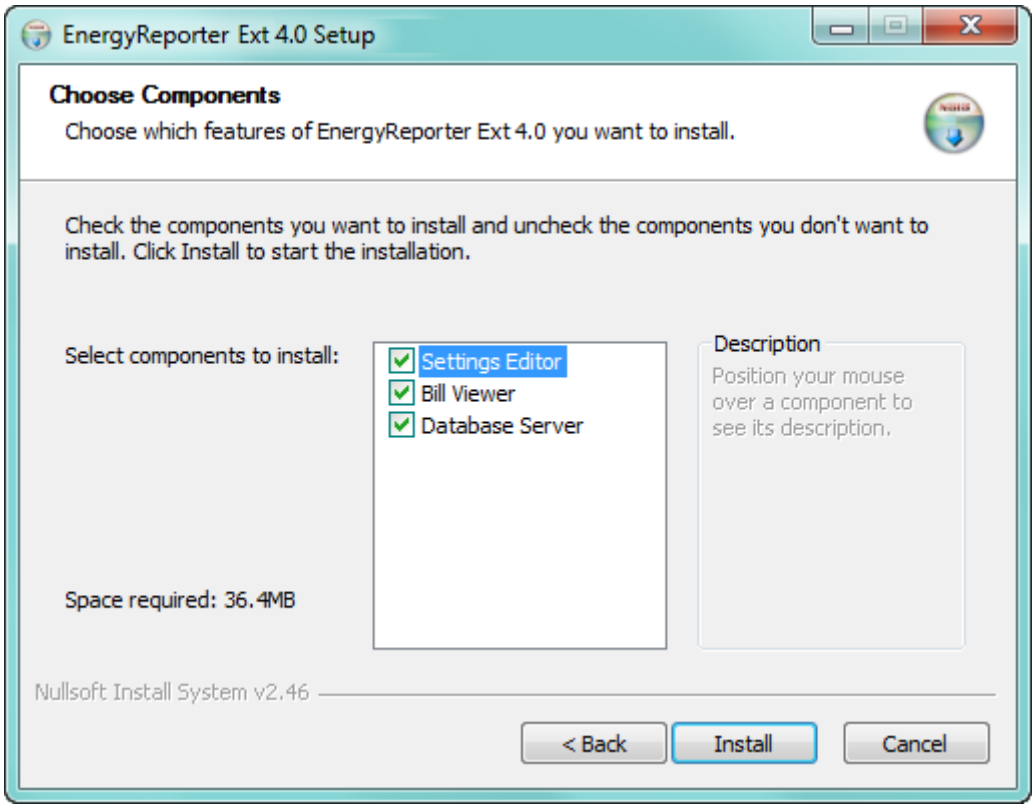
If you accept the terms of the agreement, click I Agree to continue. You must accept the agreement to install EnergyReporter Ext 4.0.
Nullsoft Install System v2.46
< Back
I Agree
Cancel

4. This is the license agreement for the EnergyReporter EXT application. Use the scroll bar to view the entire document. Please make sure you read and agree to the terms of our End User License Agreement; then click Agree. By clicking Agree, you are agreeing to the full terms of this End User License Agreement.


EnergyReporter Ext 4.0 Setup
Choose Components
Choose which features of EnergyReporter Ext 4.0 you want to install.
Check the components you want to install and uncheck the components you don't want to install. Click Install to start the installation.
Select components to install:
Settings Editor
Bill Viewer
Database Server
Description
Position your mouse over a component to see its description.
Space required: 36.4MB
Nullsoft Install System v2.46
< Back
Install
Cancel

5. You have two options for the database server:

- Local Only: the database server is installed under the current user, and is only run when the client software (EnergyReporter Settings Editor, EnergyReporter Dashboard Viewer) is run. Additionally, the database server is only accessible from the local machine, and only by the installing user. This is primarily used when installing under restricted accounts, standalone systems or on laptops. Bills and reports must be manually generated.

- Network Server: the database server is installed under a special user, as a service. The database is accessible from other machines on port 5432, and is started when the computer starts. This is the default installation setting, and allows users on other computers to access the database. This setting requires that the installing user have permission to create users and set up services. This is a Client/Server application and as such you may need administrator help to install the software in this mode. Bills and reports are automatically generated.

The diagrams below and on the next page show the differences between the Local and Network database server functionality.

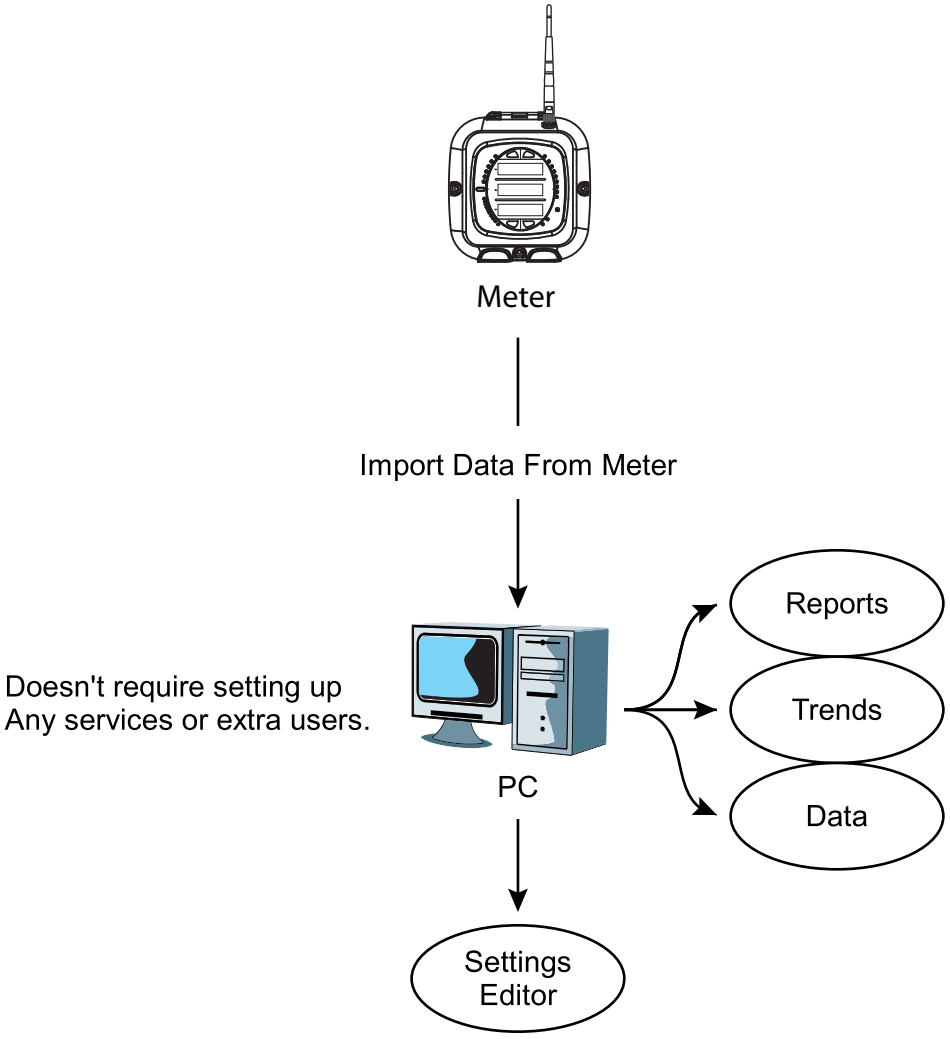


Figure 1.1: Local Database Server

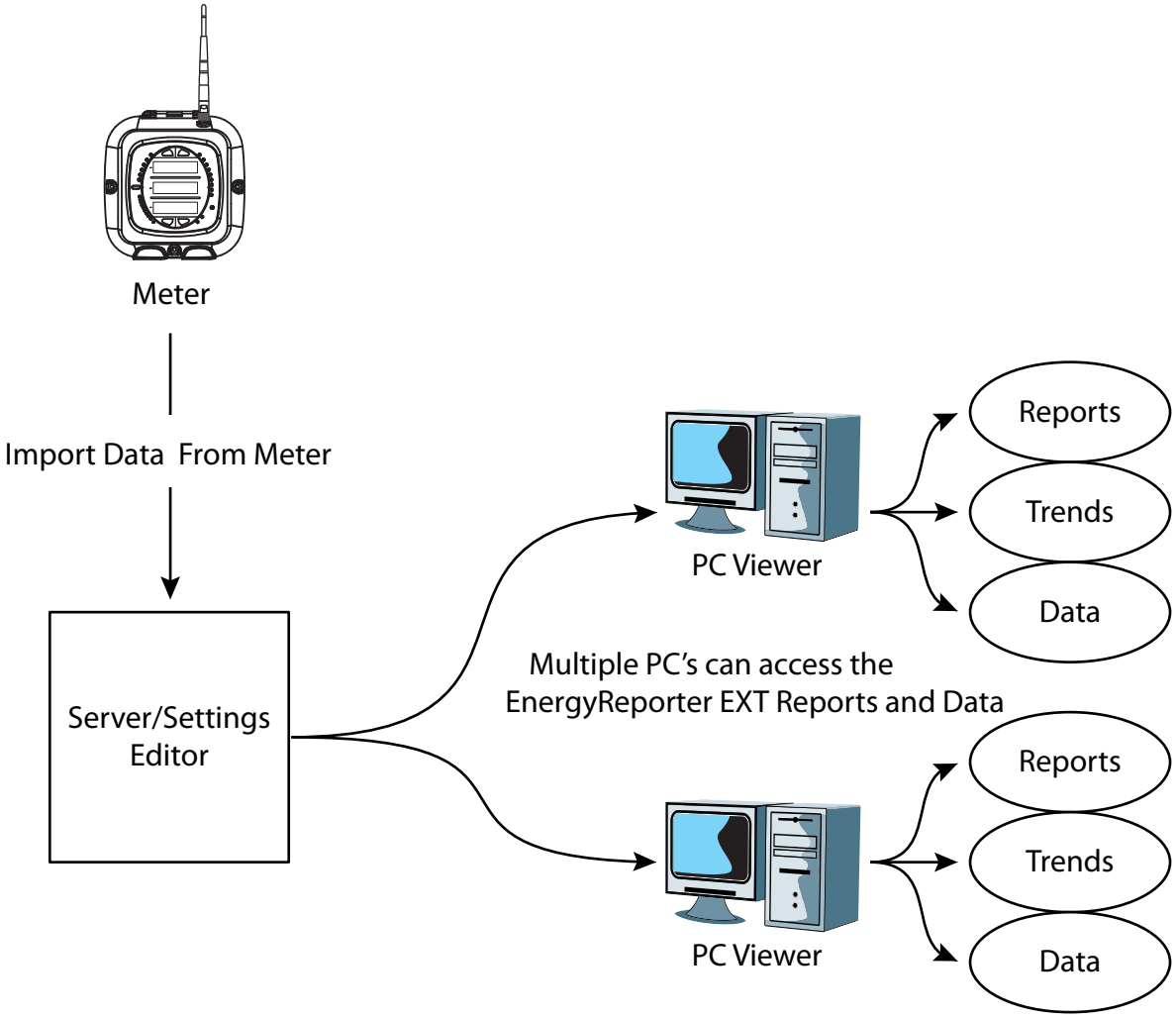
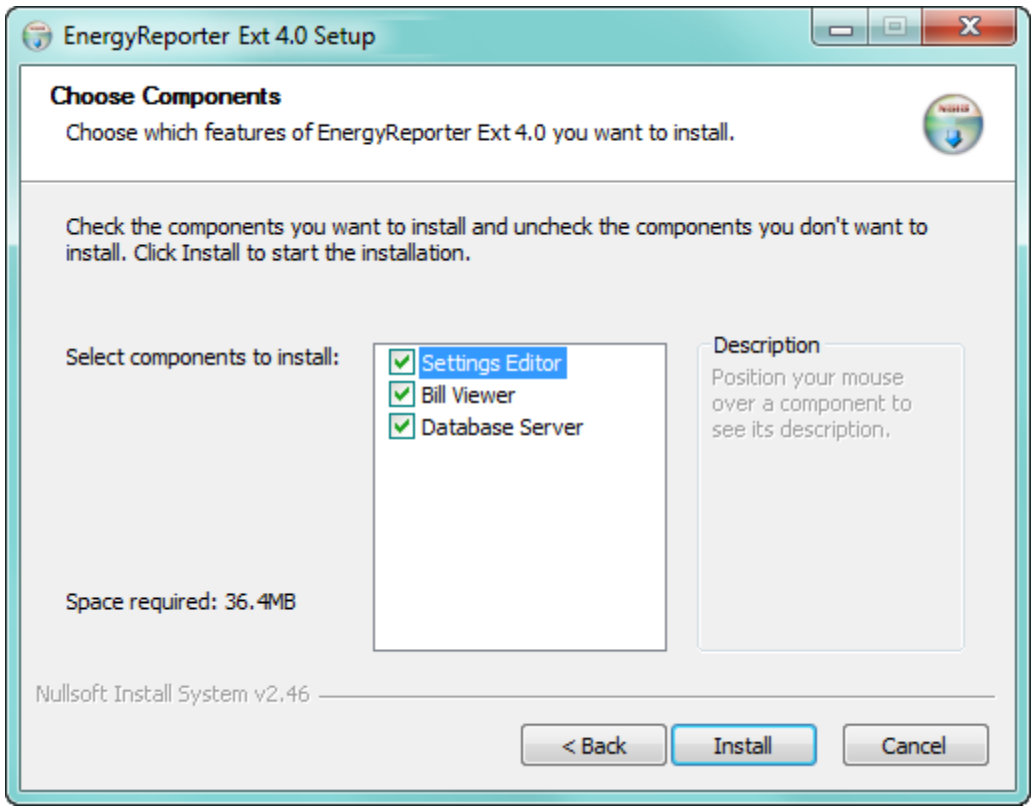


Figure 1.2: Network Database Server

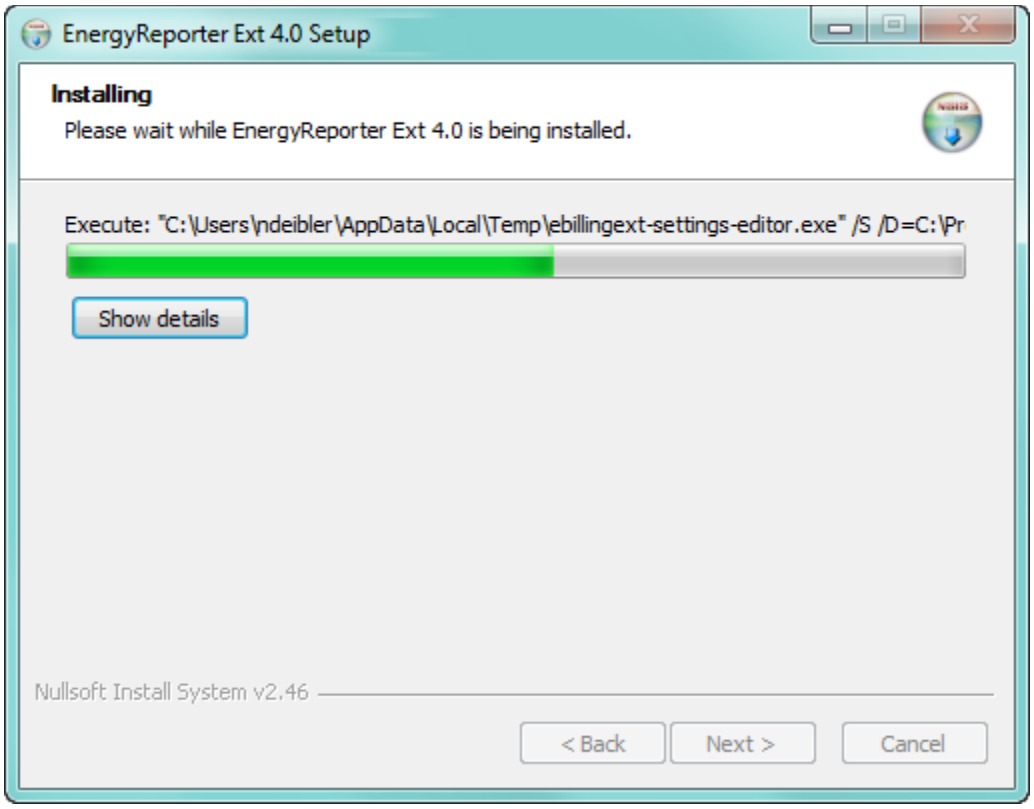
6. Click Next. You will see the screen shown below.


EnergyReporter Ext 4.0 Setup
Choose Components
Choose which features of EnergyReporter Ext 4.0 you want to install.
Check the components you want to install and uncheck the components you don't want to install. Click Install to start the installation.
Select components to install:
Settings Editor
Bill Viewer
Database Server
Description
Position your mouse over a component to see its description.
Space required: 36.4MB
Nullsoft Install System v2.46
< Back
Install
Cancel

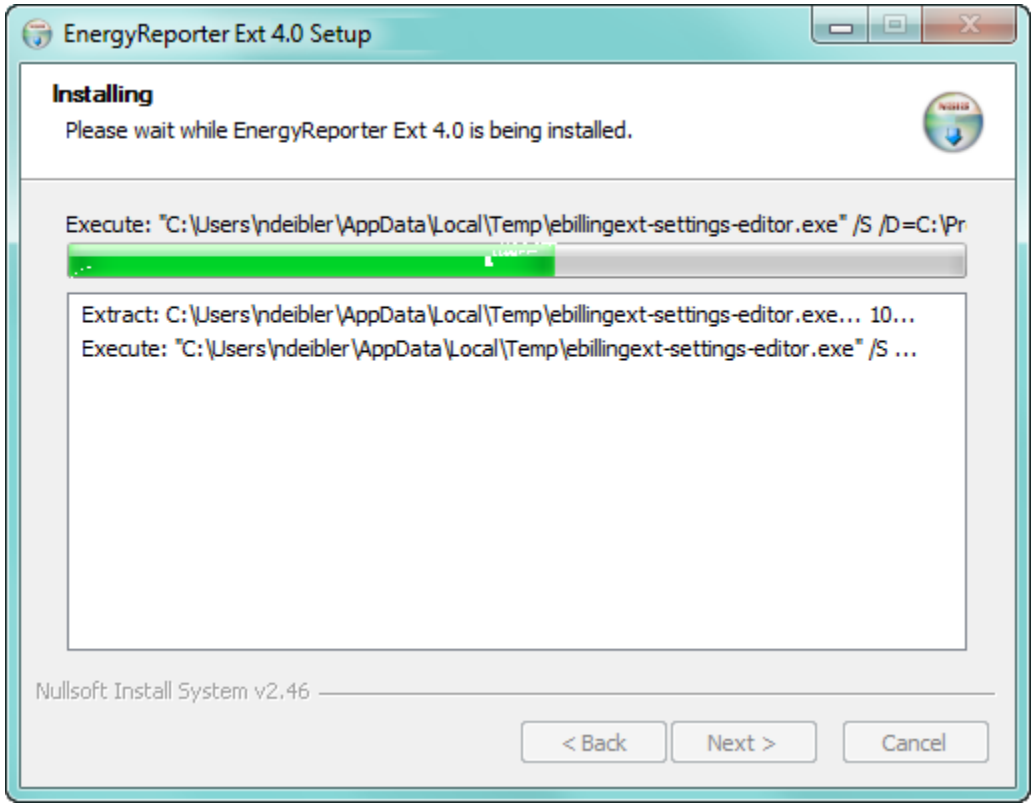
This screen lets you choose the application components you will install on the PC.

- If you are setting up this PC as a Viewing Client only (not able to make changes to settings), check only the Bill Viewer box.
- If you are setting up this PC as both a Viewing Client and an Editing Client (able to make changes to settings), click both the Settings Editor and Bill Viewer boxes.
- If you are setting up this PC as the Network database server, click all three boxes.

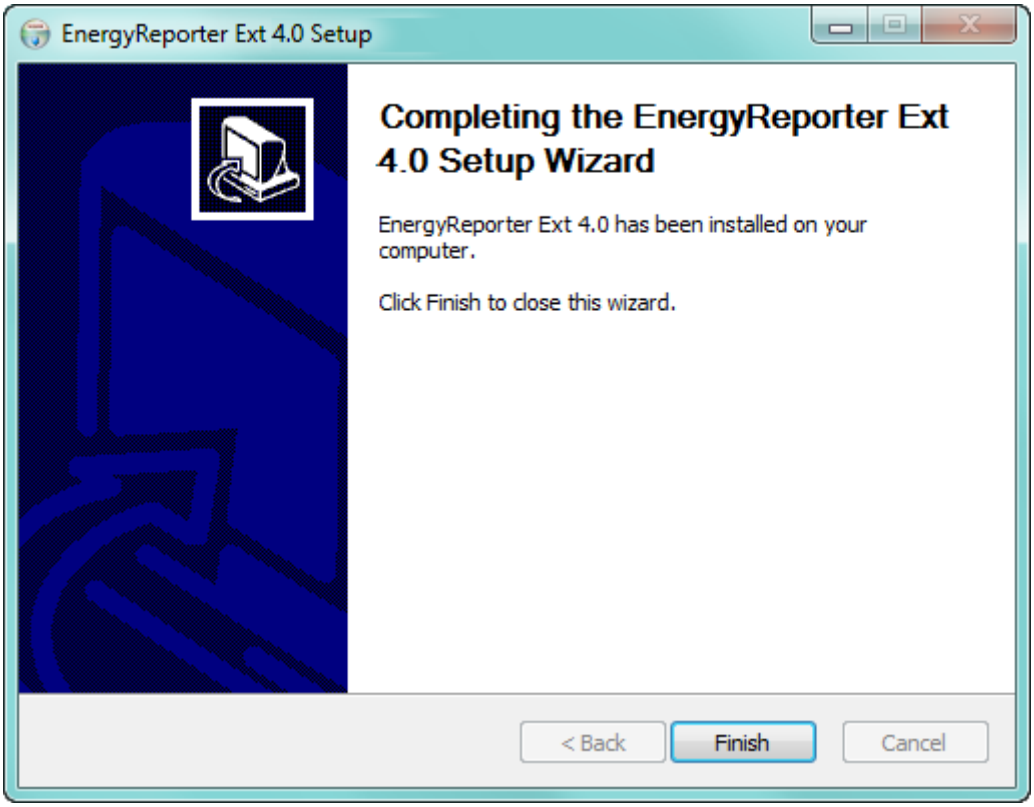
7. Click the check box next to the components you want and click Install. You will see the screen shown below as the software is being installed.



8. If you want to display the detailed actions during the installation, click the Show Details button. You will see a display on the lower part of the screen as files are being installed. See the example screen on the next page.


EnergyReporter Ext 4.0 Setup
Installing
Please wait while EnergyReporter Ext 4.0 is being installed.
Execute: "C:\Users\ndeibler\AppData\Local\Temp\ebillingext-settings-editor.exe" /S /D=C:\Pr
Extract: C:\Users\ndeibler\AppData\Local\Temp\ebillingext-settings-editor.exe... 10...
Execute: "C:\Users\ndeibler\AppData\Local\Temp\ebillingext-settings-editor.exe" /S ...
Nullsoft Install System v2.46
< Back
Next >
Cancel

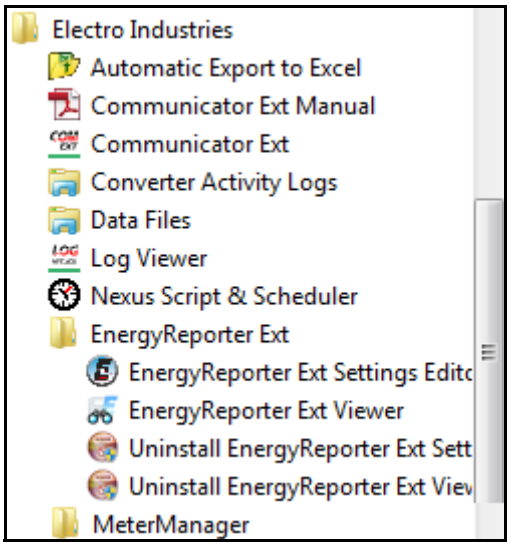
9. When the application has been installed, you will see the screen shown below.


EnergyReporter Ext 4.0 Setup
Completing the EnergyReporter Ext 4.0 Setup Wizard
EnergyReporter Ext 4.0 has been installed on your computer.
Click Finish to close this wizard.
< Back
Finish
Cancel

10. Click Finish to close the Setup Wizard.

11. To run the application, select it from the Start menu:

Start>All Programs>Electro Industries>EnergyReporter EXT>Energy Reporter EXT Viewer **or** EnergyReporter EXT Settings Editor



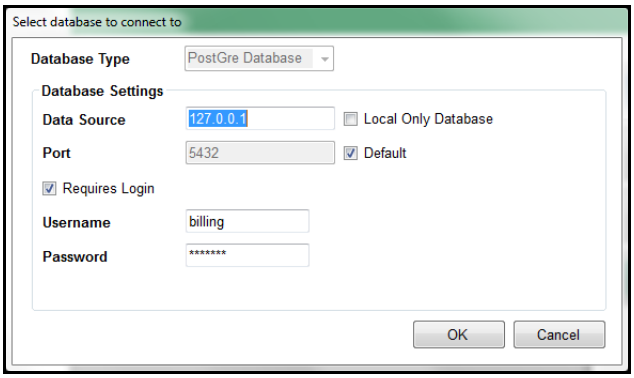
1.3: Connect to the Database Server

If you are running the EnergyReporter EXT application on a PC that is not the database server, or does not have the database files you want to use, you need to specify where the application can find the database files you need.

1.3.1: Specify the Database Server

When you open the EnergyReporter EXT application's EnergyReporter Settings Editor, the application tries to connect to the database on the PC you are using. If the database is not found, for instance, if you have set up the Network database sever (see Section 1.2.1, step 6) and you are on a Client PC (which is a PC other than the Network server), you will see a screen with the Configure System icon. Click the icon to open the screen shown below.

NOTE: If you set up the Local Only database server (see Section 1.2.1, step 5) on the PC you are using, you do not need to change anything, unless you want to use a billing database that is stored on another PC. If that is the case, click File>Connect to Database from the EnergyReporter Settings Editor Menu bar and continue with the instructions below.



1. Enter the information for the database server (the settings above are examples, only):

   - Database Type: EIG is only supporting a PostGre database for its database type.
   - Data Source: the database server's IP address. If the database is configured as Local Only (see Section 1.2.1, step 5) make sure the Local Only Database checkbox is selected.

- Port: the port to connect to the server on. By default, the port is 5432, which displays when you click the Default checkbox.

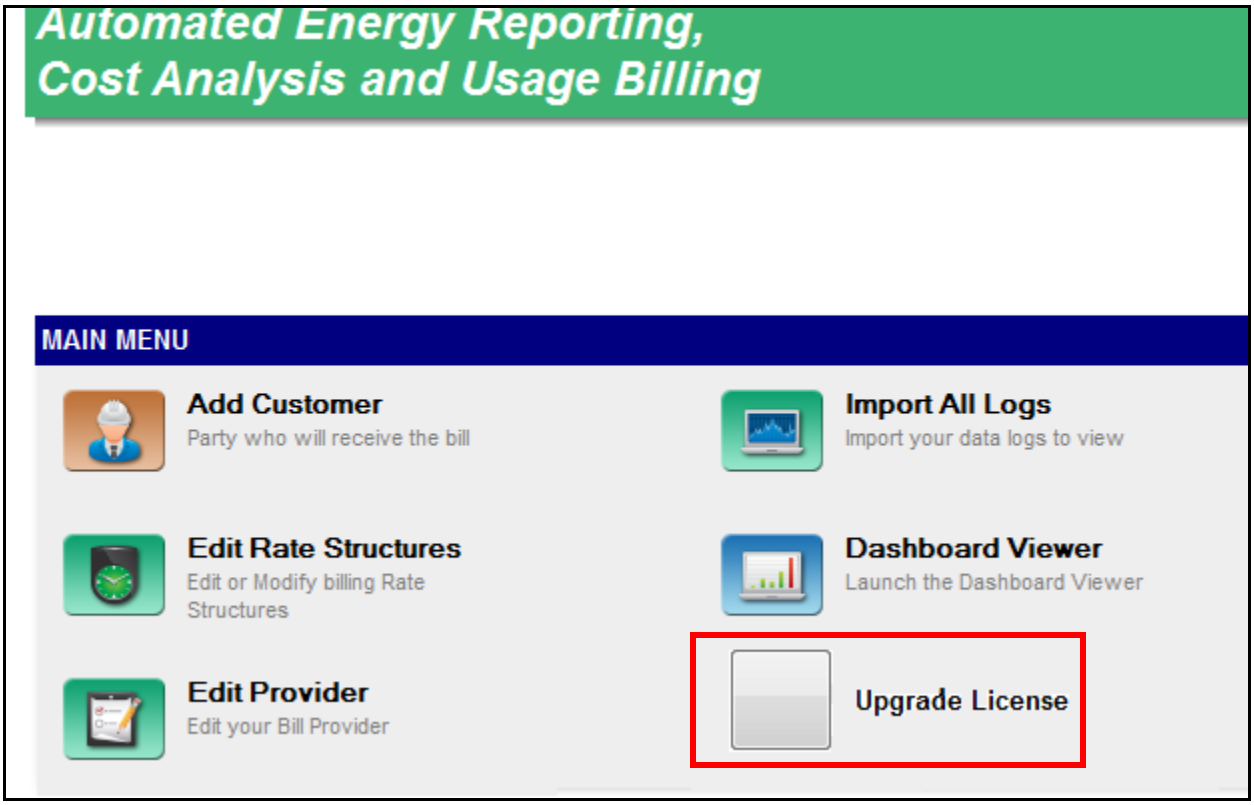
- Requires Login: Leave this box checked.

2. Click the OK button to process your entries. The software connects to the specified database.

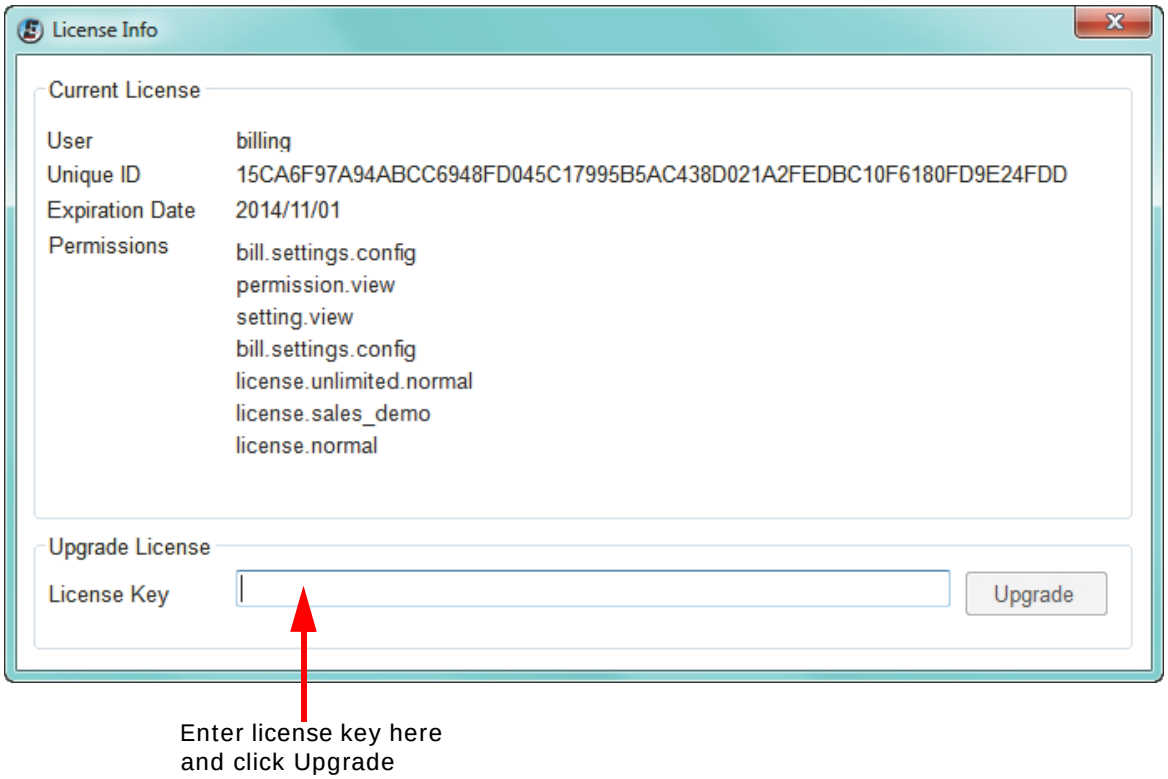
1.4: Enter a Software License Key

When you first use the EnergyReporter EXT application, you need to enter the software license key that lets you use the full version of the application (the Demo version lets you set up only one location and does not perform the automatic check for updates).

1. From the EnergyReporter Settings Editor, click the Upgrade License icon (or click Help>Upgrade User License).



This window opens.



2. Contact EIG's inside sales staff at sales@electroind.com. In the email give your name, company name and the Unique ID code shown in the License Info screen. You will receive a reply email with the software license key.

3. Enter the software license key and click the Upgrade button. The software will be upgraded to the full version of the application.

1.5: Steps for Using the EnergyReporter EXT Application

As mentioned at the beginning of this chapter, the EnergyReporter EXT application generates bills using either Communicator EXT™ log databases or the polling engine of the HMI EXT™ application. (Because the HMI EXT™ application is specifically configured for each customer site, data setup for the EnergyReporter EXT application is done when the HMI EXT™ application is installed and configured by a certified system integrator.)

You already performed Step 1 in this chapter. You need to perform the following steps in order to set up the database files to be used for Energy and other commodity logging, and to use the EnergyReporter EXT application to generate usage reports and bills:

Step 2 - Use the MeterManager EXT application to set up your meters for automatic log retrieval. Instructions for this step is given in Chapter 2; additional information is located in chapters 16 and 18 of the *Communicator EXT™ 4.0 Software User Manual*.

Step 3 - The EIG meters are already set up for Energy logging - there is nothing additional you need to do. If you need to make any changes, you use the Communicator EXT™ application to configure your meter(s) to log the values you want to use for Energy and other commodity logging. The instructions for this are in Chapter 3.

Step 4 - Configure the EnergyReporter EXT application settings: provider, customer, customer locations, rate structures, meters at location. The instructions for this step are in Chapter 4.

Step 5 - Use the EnergyReporter Dashboard Viewer: use the Usage Dashboard to compare usage data for different time frames/meters/dates and compared to weather data; generate and view usage reports and bills The instructions for this step are in Chapter 5.

Chapter 6 - Manage data.

Chapter 7 - View the Action log, test the application, and learn additional tips and advanced options.

2: Step 2 – Use MeterManager EXT to Automate EnergyReporter EXT

You use the MeterManagerEXT application to organize your meters and to set up automatic log retrieval, both of which make the EnergyReporter EXT application very simple to use.

- The MeterManager EXT application lets you automatically add all of your network meters to its Meter List. The Meter List is an essential feature for the EnergyReporter EXT application. All you have to do to set up your billing locations is to add meters to it from the Meter List. All of the meter data you need is then automatically brought into the EnergyReporter EXT application.

- The MeterManager EXT application lets you set up automatic log retrieval for all of your meters.

NOTE: The basic steps are described here, but there are other features of the MeterManager EXT application, which are covered in the *Communicator EXT™ 4.0 and MeterManager EXT Software User Manual.*

There are two ways to add meters into the Meter List:

1. Auto Discovery - this is the simplest method. In this mode the software searches out and locates any meters on the network. Once the meters are found, they are automatically added to groups (based on the meter type), and the software automatically begins to download stored meter data.

2. Manual Connect - in this mode, you manually connect to the meter using its IP address. Once the address is entered, the software adds it to a group (based on the meter type), and automatically begins to collect stored meter data for that meter.

2.1: Add Meters to the Meter List Using Auto Discovery

There are two methods to configure Auto Discovery. Use whichever one best suits your needs.

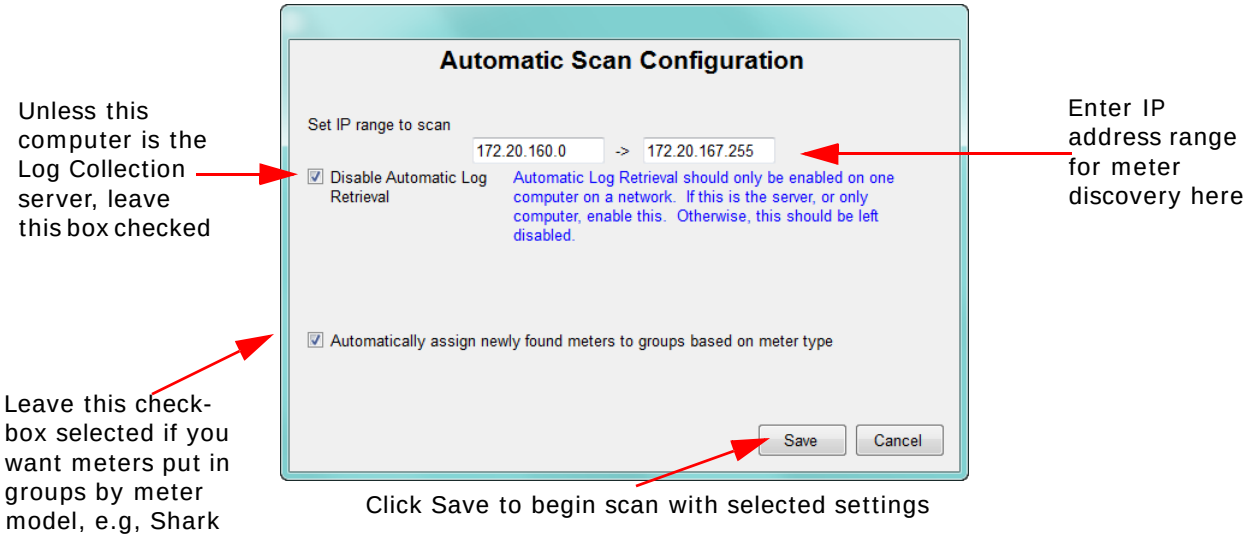
- Auto Scan - searches an IP range you enter for network meters and adds them to the Meter List.

- Meter Discovery Configuration - gives you access to additional settings for customizing scanning for meters. See Chapter 18 in the *Communicator EXT™ 4.0 and MeterManager EXT Software User Manual* for instructions for using Meter Discovery Configuration.

When you use Auto Scan, the application looks for and adds Network meters in the IP address range you enter. You have the option of putting the meters into groups based on meter type, e.g., Shark.

NOTE: The first time you start the MeterManager Monitor after installation, you are asked if you want to enable Auto Scan. EIG recommends that you do enable Auto Scan.

1. Click the Auto Scan icon at the top of the screen.

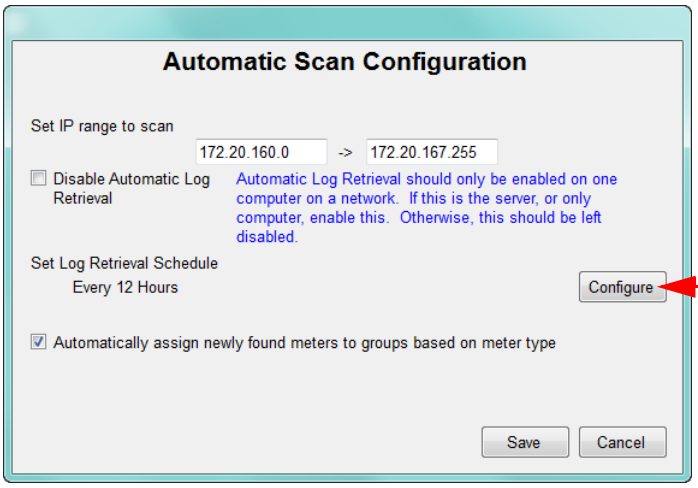

Automatic Scan Configuration
Set IP range to scan
172.20.160.0
->
172.20.167.255
Disable Automatic Log Retrieval
Automatic Log Retrieval should only be enabled on one computer on a network. If this is the server, or only computer, enable this. Otherwise, this should be left disabled.
Automatically assign newly found meters to groups based on meter type
Save
Cancel
Unless this computer is the Log Collection server, leave this box checked
Enter IP address range for meter discovery here
Leave this check-box selected if you want meters put in groups by meter model, e.g, Shark
Click Save to begin scan with selected settings

2. In the Automatic Scan Configuration screen, you set:

- The IP range in which you want the application to search for meters: the starting and ending IP addresses.
  NOTE: EIG meters use Modbus for communication, which defaults to Port 502. However, if you have changed the Modbus port on the meter, or are using a network device that changes the port mapping, you can specify the port range to scan by adding ":[port]" after the IP address.
  For example, range 192.168.0.1:503 to 192.168.0.255:505 will scan all IP addresses from 192.168.0.1 to 192.168.0.255, and attempt to connect to those IP addresses via ports 503, 504, and 505.

- Whether or not meters are grouped by meter model. Leave the checkbox selected to group any discovered meters this way, for example, into Shark or Nexus groups. Groups are used to perform tasks on multiple meters at one time. See Section 18.2.2 for information on groups.

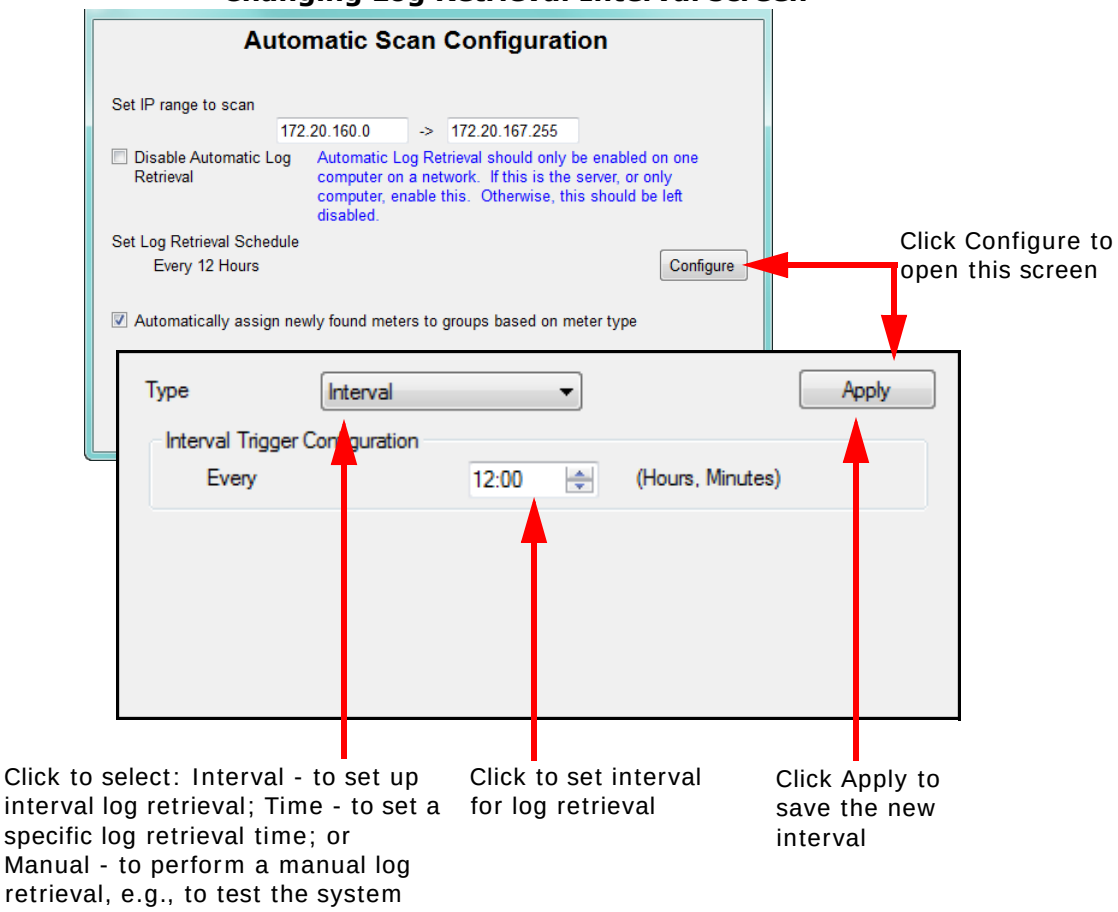
- Disable automatic log retrieval - the default of this screen is that automatic log retrieval is disabled for the computer (the box is checked). That is because only one computer in the network - the server, should be enabled for automatic log retrieval.
    - If this computer is not the Log Collection server, leave the box checked.
    - If this computer is the Log Collection server, click on the box to uncheck it - the screen will change as shown below.


Automatic Scan Configuration
Set IP range to scan
172.20.160.0
->
172.20.167.255
Disable Automatic Log Retrieval
Automatic Log Retrieval should only be enabled on one computer on a network. If this is the server, or only computer, enable this. Otherwise, this should be left disabled.
Set Log Retrieval Schedule
Every 12 Hours
Configure
Automatically assign newly found meters to groups based on meter type
Save
Cancel

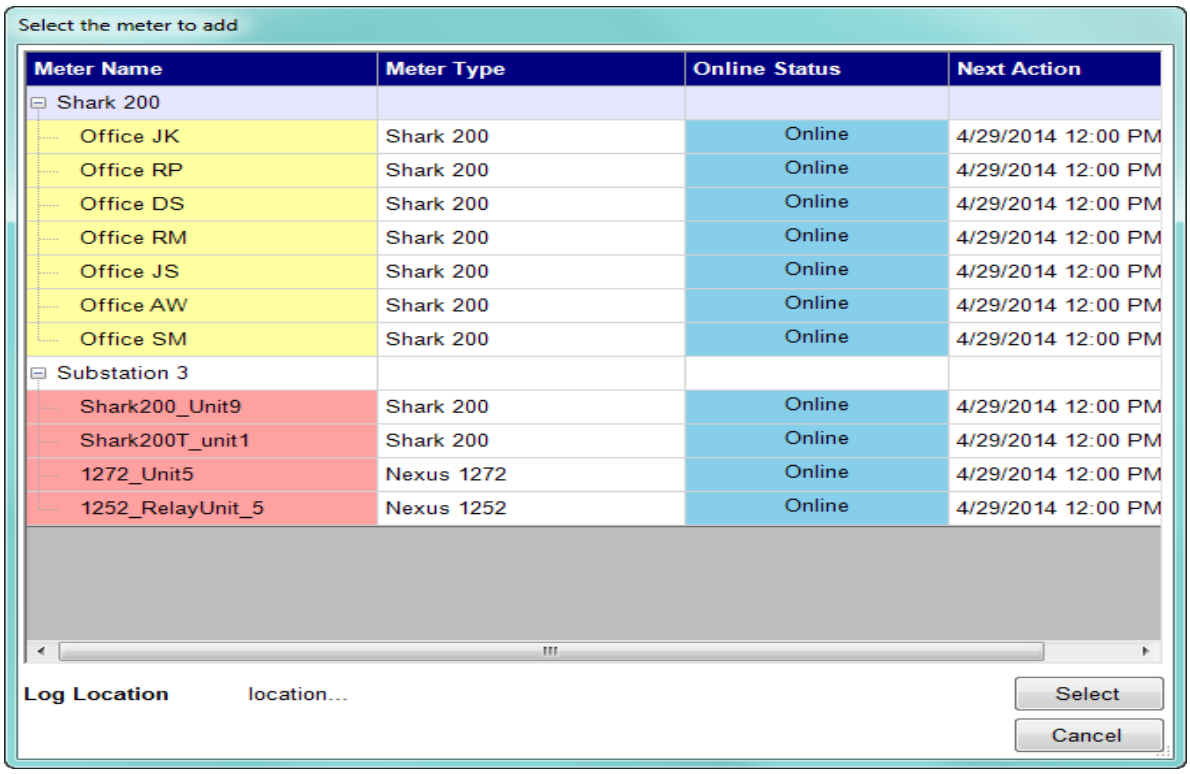
Click to set up a log retrieval interval of other than every 12 hours (not recommended)

- Now that you have enabled automatic log retrieval for the computer, you can set the log retrieval interval. The default is every 12 hours, which is the recommended setting. If you want to change the interval, click the Configure button and then enter the new interval. See the example screen on the next page.

Changing Log Retrieval Interval screen

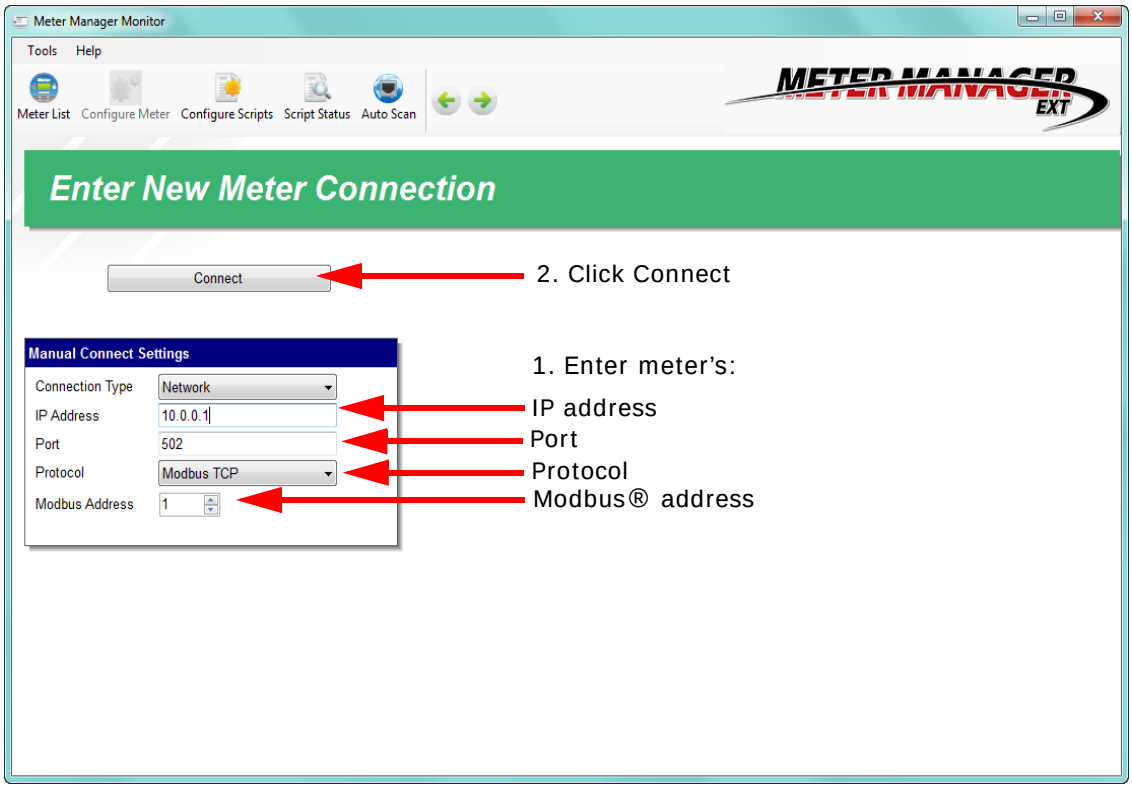

Automatic Scan Configuration
Set IP range to scan
172.20.160.0
->
172.20.167.255
Disable Automatic Log Retrieval
Automatic Log Retrieval should only be enabled on one computer on a network. If this is the server, or only computer, enable this. Otherwise, this should be left disabled.
Set Log Retrieval Schedule
Every 12 Hours
Configure
Automatically assign newly found meters to groups based on meter type
Type
Interval
Apply
Interval Trigger Configuration
Every
12:00
(Hours, Minutes)
Click Configure to open this screen
Click to select: Interval - to set up interval log retrieval; Time - to set a specific log retrieval time; or Manual - to perform a manual log retrieval, e.g., to test the system
Click to set interval for log retrieval
Click Apply to save the new interval

- Click Save to begin the automatic scan for meters with these settings. In the Searching IP Address field of the Status section, the Meter List screen will show the IP addresses as the application searches for meters. When searching is complete, the discovered meters will be shown in the Meters List (see the example screen on the next page).


Select the meter to add
Meter Name
Meter Type
Online Status
Next Action
Shark 200
Office JK
Shark 200
Online
4/29/2014 12:00 PM
Office RP
Shark 200
Online
4/29/2014 12:00 PM
Office DS
Shark 200
Online
4/29/2014 12:00 PM
Office RM
Shark 200
Online
4/29/2014 12:00 PM
Office JS
Shark 200
Online
4/29/2014 12:00 PM
Office AW
Shark 200
Online
4/29/2014 12:00 PM
Office SM
Shark 200
Online
4/29/2014 12:00 PM
Substation 3
Shark200_Unit9
Shark 200
Online
4/29/2014 12:00 PM
Shark200T_unit1
Shark 200
Online
4/29/2014 12:00 PM
1272_Unit5
Nexus 1272
Online
4/29/2014 12:00 PM
1252_RelayUnit_5
Nexus 1252
Online
4/29/2014 12:00 PM
Log Location
location...
Select
Cancel

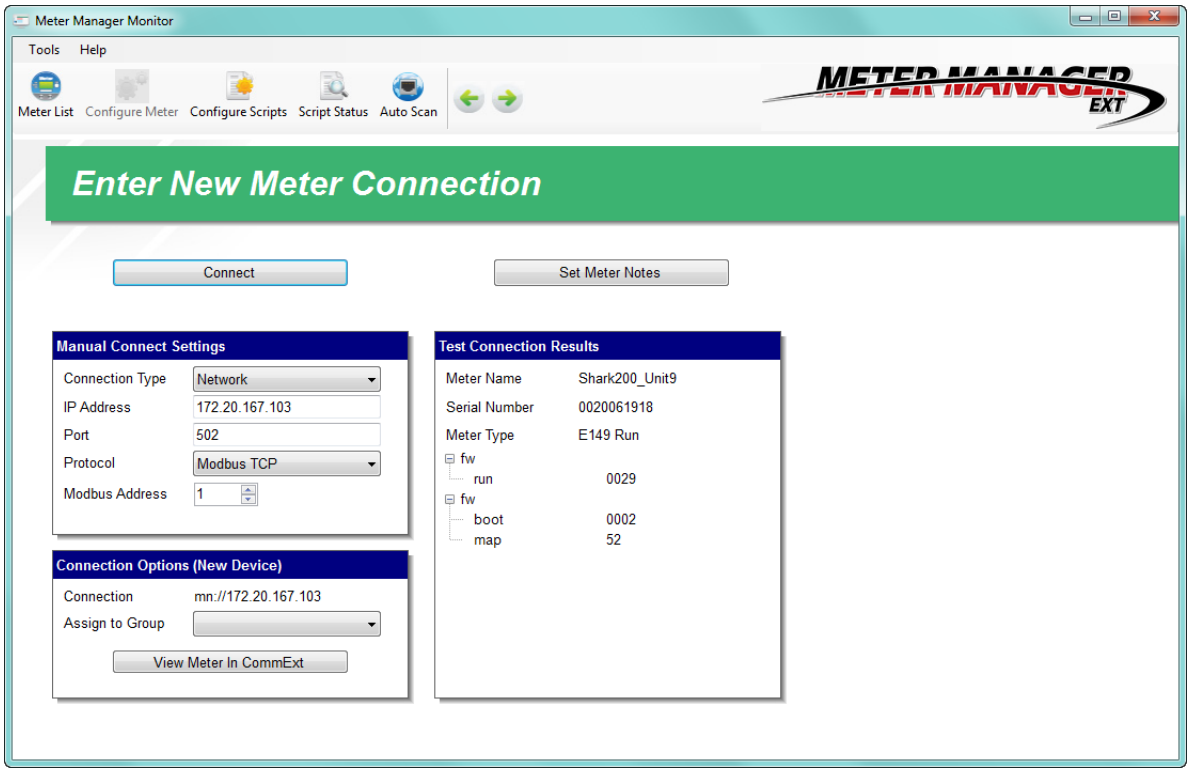
2.2: Manually Connect to Meter

To manually connect to a meter, you enter the meter's IP address.



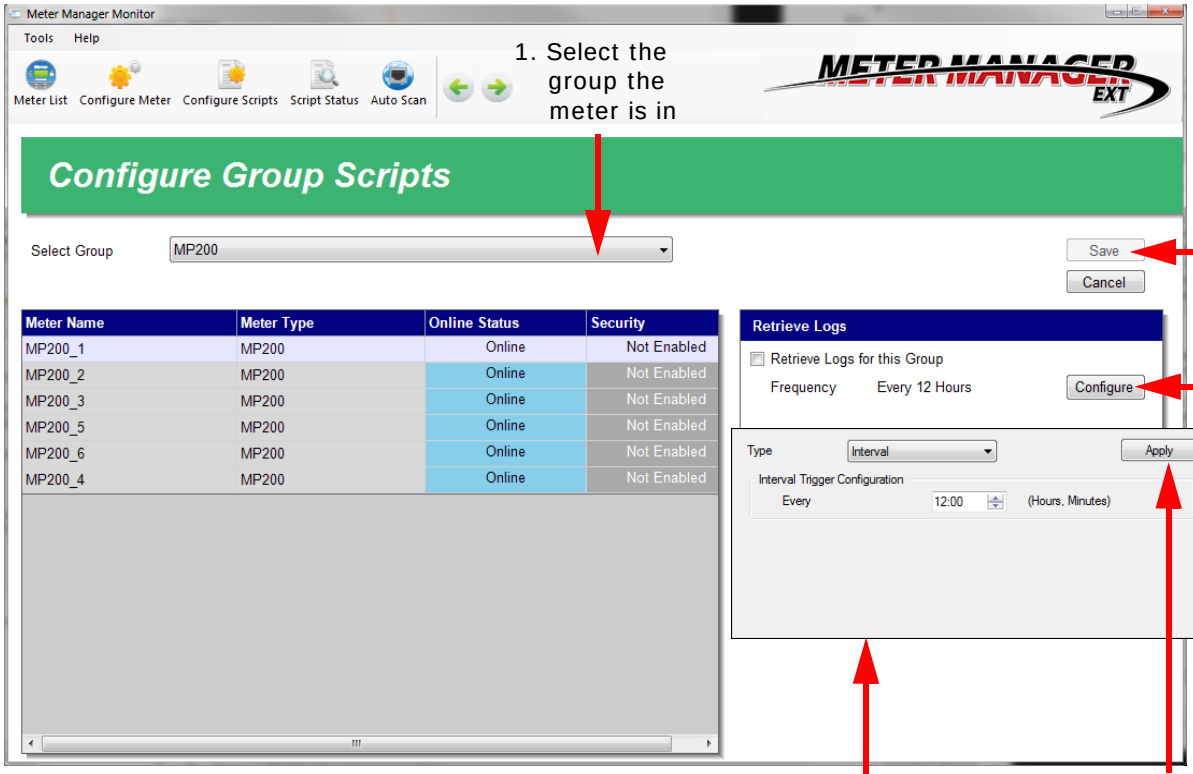
Manual Meter Setup Screen

When you click Connect, the software looks for the meter, and, when found, shows the screen below.



This screen shows meter connection information. Click Connect to add the meter to the Meter List.

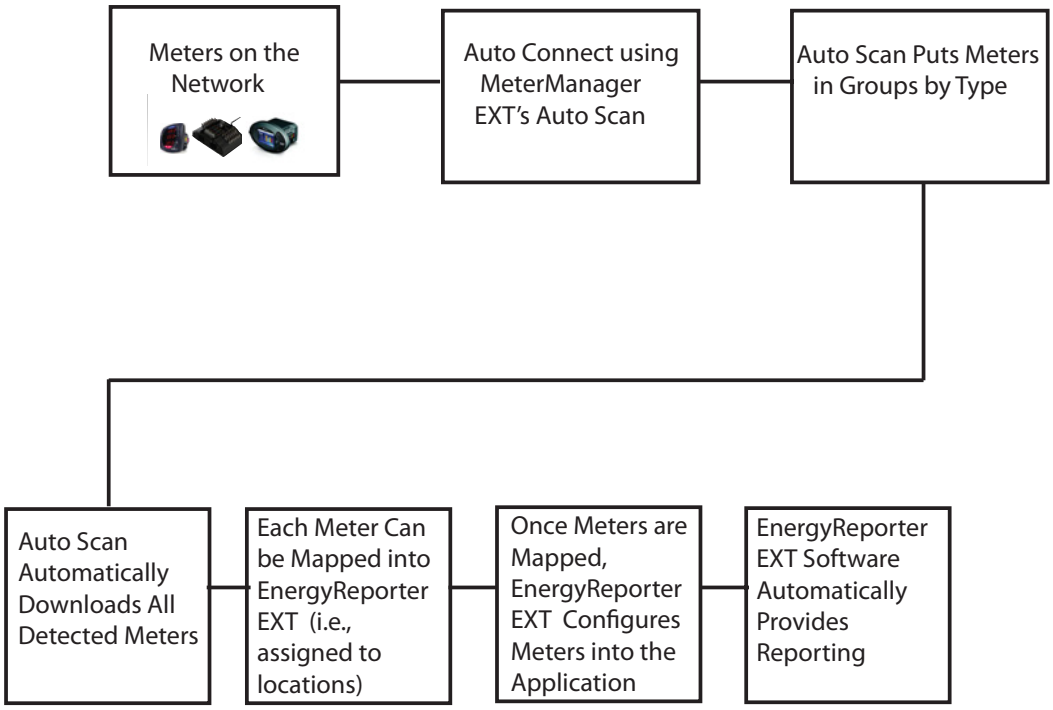
- You set the interval for log retrieval for a manually connected meter by clicking Configure Scripts from either the left side or top of the Meter List screen.



1. Select the group the meter is in
2. Click Configure to open the Interval setting screen
3. This screen is the same as shown on page 2-4: see instructions there
4. Click Apply
5. Click Save to implement change

2.3: Log Retrieval through MeterManager EXT

When log retrieval is performed by the MeterManager EXT application, logs for all of the meters in the group(s) are automatically retrieved at the programmed interval, making the job of managing multiple meters simple. The EnergyReporter EXT application automatically imports the retrieved logs and uses them to build the EnergyReporter usage database. The usage database is then used to generate usage reports, bills, and viewing Dashboard data. See the diagram below.


Meters on the Network
Auto Connect using MeterManager EXT's Auto Scan
Auto Scan Puts Meters in Groups by Type
Auto Scan Automatically Downloads All Detected Meters
Each Meter Can be Mapped into EnergyReporter EXT (i.e., assigned to locations)
Once Meters are Mapped, EnergyReporter EXT Configures Meters into the Application
EnergyReporter EXT Software Automatically Provides Reporting

For more detailed instructions on the MeterManager EXT application, see Chapter 18 of the *Communicator EXT™ 4.0 Software User Manual*.

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3: Step 3 – Set Up Logging

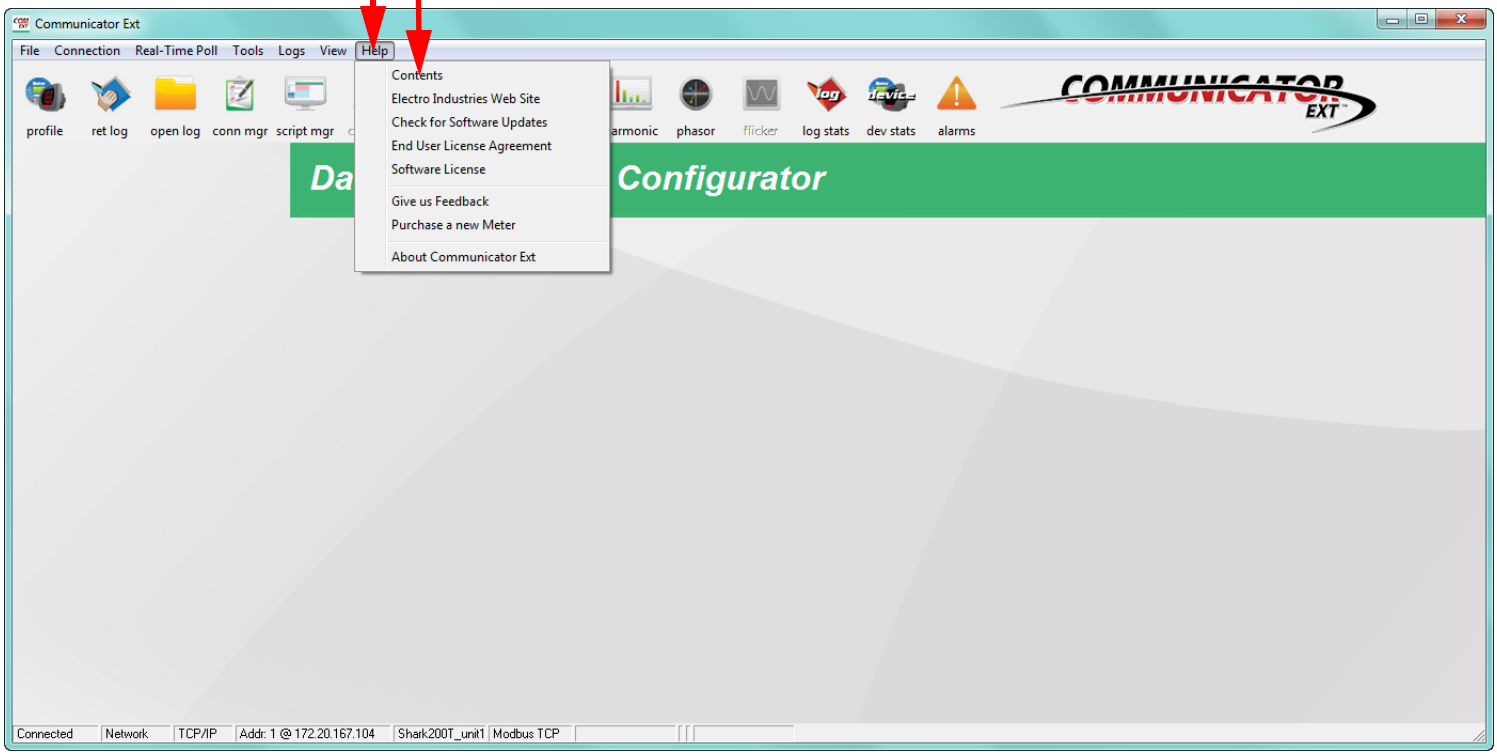
In most cases, there is no need to do anything special to set up logging for the EnergyReporter EXT database. This is because all EIG meters ship with a default Device Profile that logs energy values. As long as you haven't changed this, the automatic log retrieval set for the meters using MeterManager EXT will get all the data that the EnergyReporter EXT application needs in order to generate usage reports.

However, in the event that you need to make a change, you set up Energy, Energy in the Interval, and other Commodity logging in the meter's Device Profile, accessed through the Communicator EXT™ 4.0 software.

NOTE: Only the basic steps are given here. For more detailed information, consult the *Communicator EXT™ 4.0 and MeterManager EXT Software User Manual* (you can access the manual online by clicking Help>Contents in the Communicator EXT™ 4.0 Menu Bar).

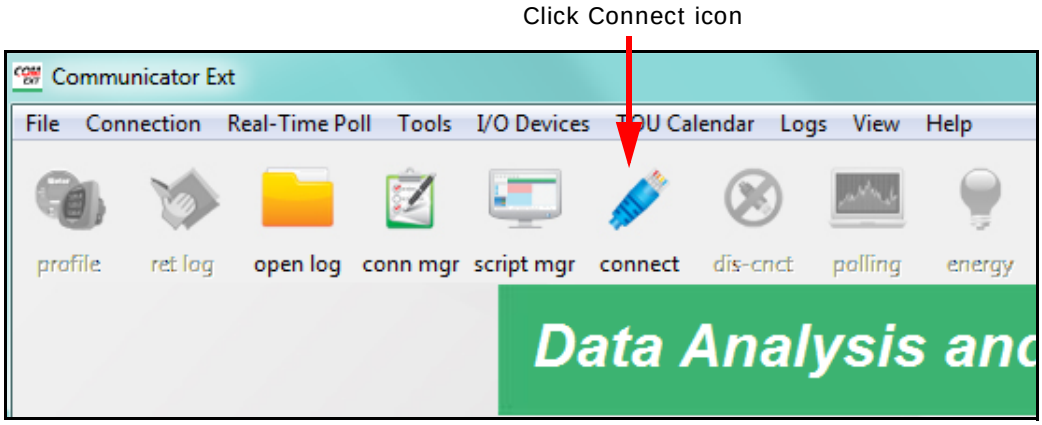
1. Click Help

2. Click Contents to view manual

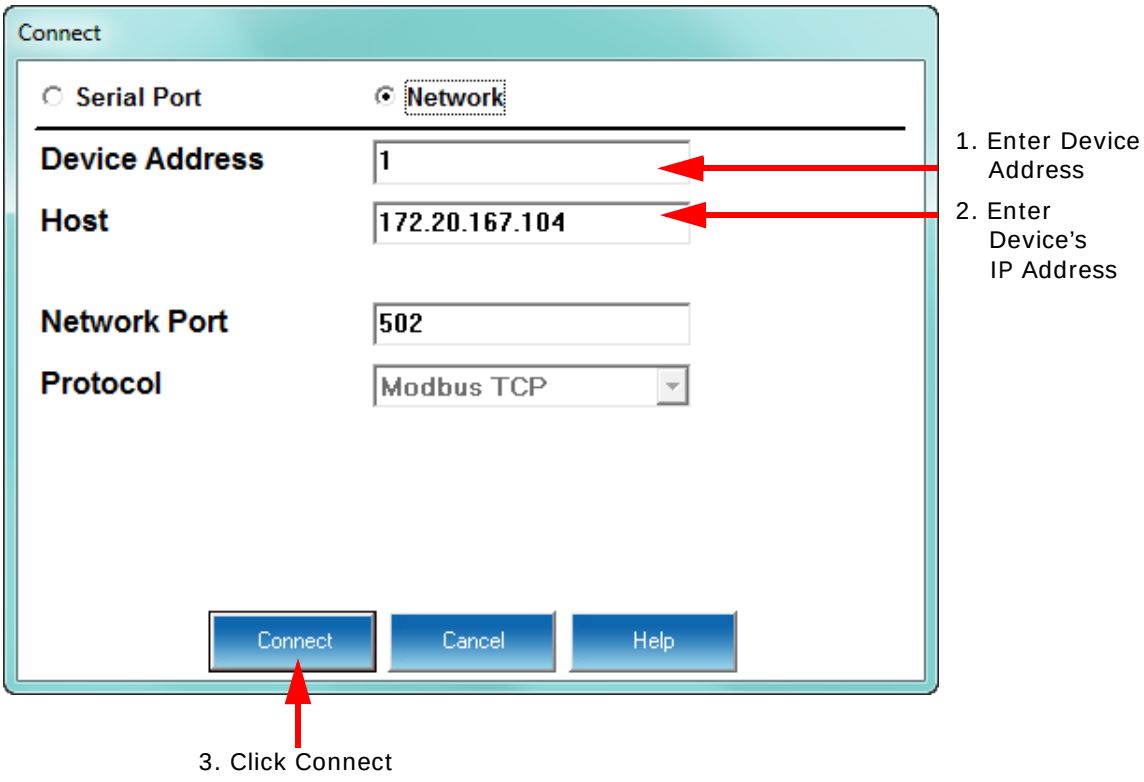


1. Open the Communicator EXT™ 4.0 application by clicking Start>All Programs>Electro Industries>Communicator EXT. You will see the screen shown above.

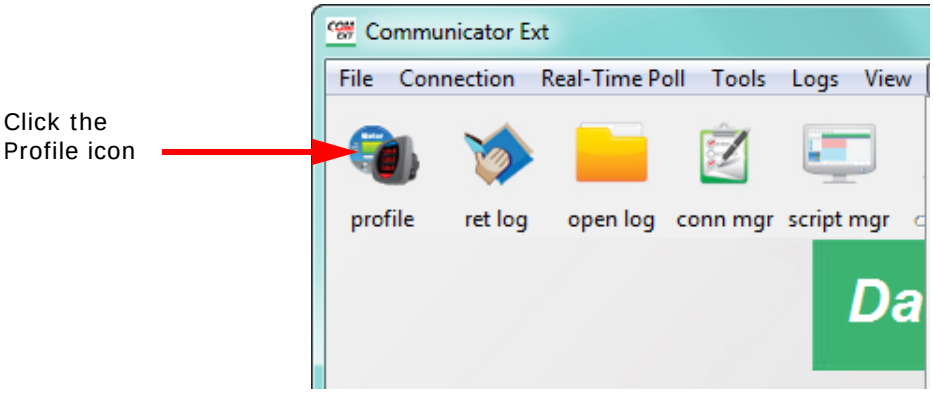
2. Click the Connect icon in the Icon bar to connect to the meter you are setting up.



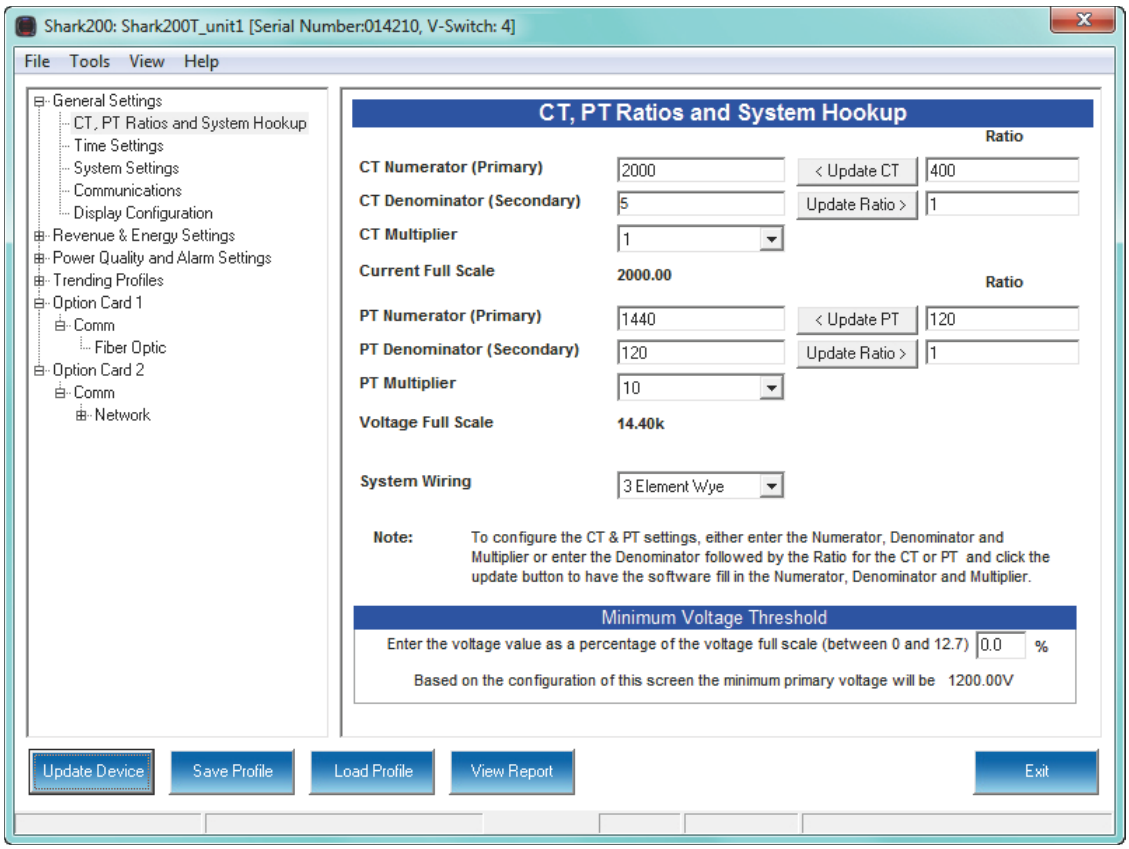
See the example screen below.



3. From the Communicator EXT™ main screen, click the Profile icon.



The Device Profile screen for the meter opens. See the example screen, shown below.



Shark® 200 Meter Device Profile Screen

4. For the Shark® meters and the MP200 metering system, click on the + sign next to Trending Profiles; for the Nexus® meters, click the + sign next to Trending Profile Settings and then the + sign next to Trending Setup. You will see a list of historical (trending) logs.

Double-click on the log you want to use to trend energy or other usage. You will see a screen that lets you select the values you want to log. Refer to the table below for the values to select for energy logging.

NOTE: For the MP200 metering system there is only one historical log for use with the EnergyReporter EXT application - either historical log 2 for the MP200-Y three phase configuration or historical log 3 for the MP200-S single phase configuration. The log is pre-configured with the data points you need for logging.

Table of Settings for Logging Energy, Energy in the Interval, and Commodity

Meter	Group/Sub-group			Data Point		
	Energy	Interval Energy	Commodity	Energy	Interval Energy	Commodity
Shark	Energy	Energy in the Interval	Accumulators	Watt-hours Received	Watt-hours Received	Input used for accumulation
Nexus	Accumulators / Energy/ Scaled Primary	Interval Accumulators / Energy/ Scaled Primary	Internal Pulse Accumulation /Aggregations	Quadrant 1+4 Wh	Quadrant 1+4 Wh	Input used for accumulation
MP200	Pre-configured in Log 2 (MP200-Y) or Log 3 (MP200-S)					

See the *Communicator EXT™ 4.0 and MeterManager EXT Software User Manual* for detailed instructions.

4: Step 4 - Configure the EnergyReporter EXT Application Settings

Use the EnergyReporter Settings Editor to set up the information you need to generate usage data, bills and usage reports. When you start the EnergyReporter Settings Editor you see the main screen.

NOTE: If the MeterManager EXT application is running (downloading meter logs), you will see "Script Service Running" at the bottom right of the screen. Click on the message to either pause the MeterManager service, or open the MeterManager Monitor. See Chapters 18 of the *Communicator EXT™ 4.0 and MeterManager EXT Software User Manual* for additional information.

Follow these basic steps to set up the EnergyReporter EXT application:

1. Set up provider information. The provider is the person or organization which is providing the energy, sending the bill, and receiving payments. This information appears on the generated bills, so that the customer knows where to send payment.

2. Set up rate structures. The rate structure is the collection of settings that determine what rates to apply to the usage values for a commodity, e.g., kWh. The rate structure includes On Peak and Off Peak settings, holidays, and other charges, such as taxes.
3. Set up a customer. A customer is the person or organization which is receiving the bill. A customer may have multiple locations, each of which will get its own bill.
4. Set up the customer's locations. A billing location is a single unit for which a bill is generated, e.g., a building. A customer can have multiple locations.
5. Assign the meters and a rate structure to the customer's locations. Each location can have multiple meters and a rate structure for each commodity being billed for, e.g., Energy and gas.
6. A meter billing point can also be an aggregate of more than one metering point; this is called a virtual meter. For example:

   - Meter A + Meter B
   - Meter A + 50% of Meter B
   - Meter A - Meter B
   - Meter A - 50% of Meter B
   - Etc.

   With virtual meters a user can configure meters to accurately represent the load, by apportioning the correct amount of energy per meter for the actual circuit usage.

For example, if your customer owns three apartment buildings, you would set up each building as a location, and enter all of the meters in a building as well as any rate structures applied to usage for that building.

See the diagram below.

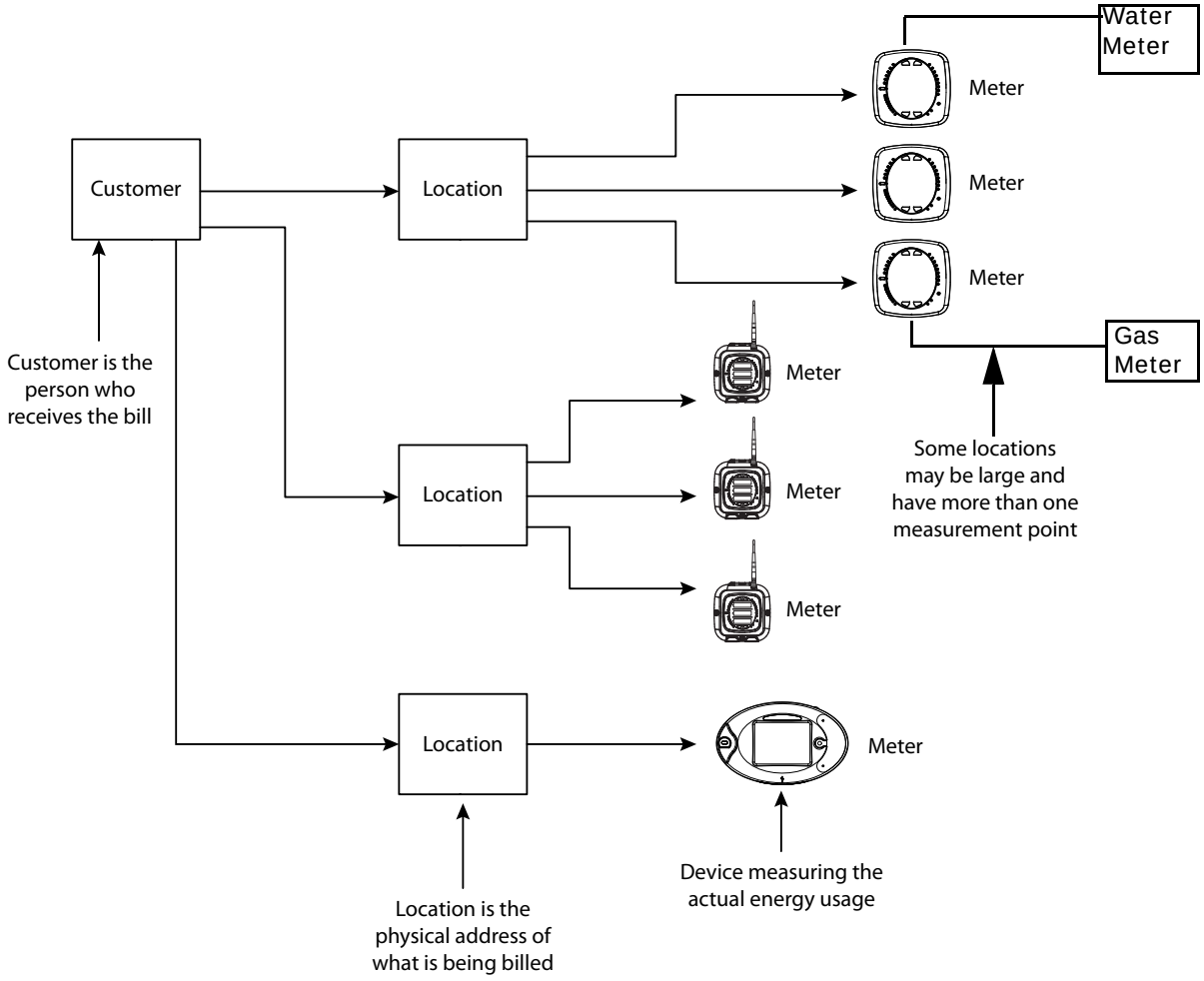
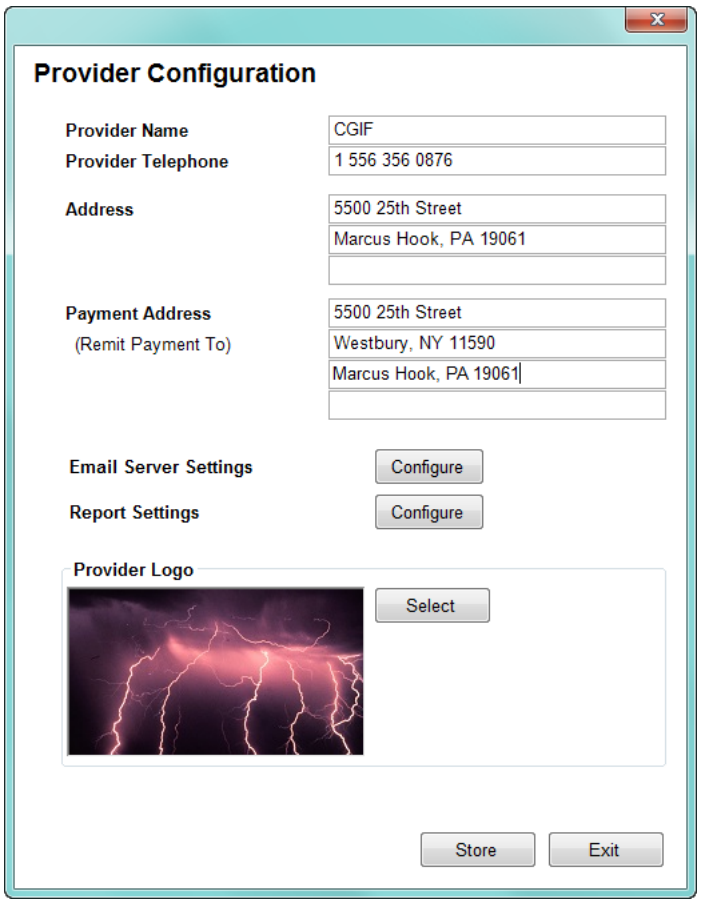


Figure 4.1: Overview of Customer Locations, Meters, Rate Structures

4.1: Set Up a Provider

First set up the provider information. The provider is the person who is sending the bill to the customer. The provider will get paid for providing the electricity or other commodity to the customer; the customer is the user of the commodity.

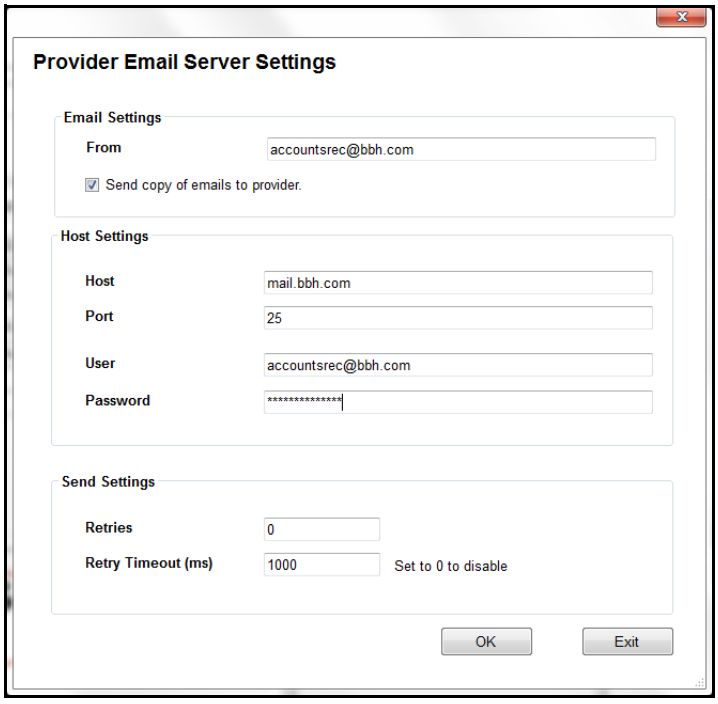
1. From the EnergyReporter Settings Editor main screen, click the Configure Provider Information icon.



2. For the provider, enter:

   - Name
   - Telephone
   - Address
   - The address where payment should be sent
   - Email Server Settings:

• Click Configure next to Email Server Settings to open the screen below.

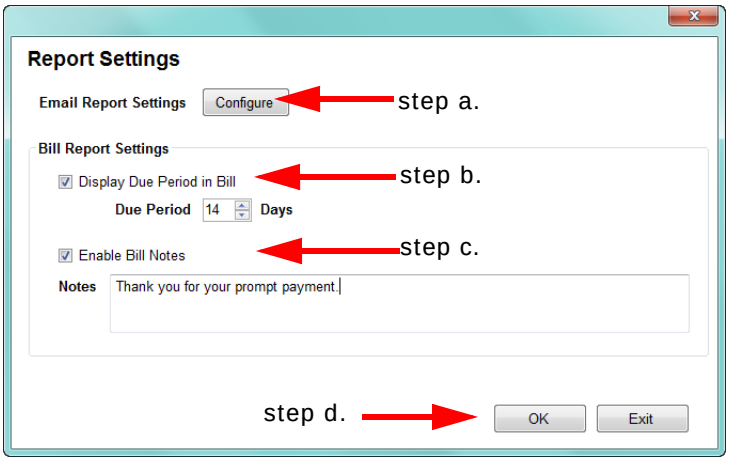


The settings on this screen are used by the software to automatically email bills and enabled reports to customers.

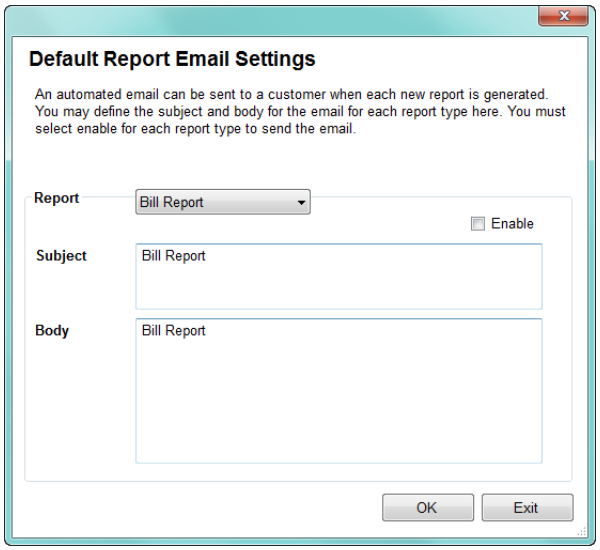
Enter the following:

- From Email: enter the name that will appear in the emails' From field.
  NOTE: When the checkbox next to "Send copy of emails to provider" is selected (checked), a copy of any bill or report email sent to a customer is sent to the From email address.
- Host Settings: enter the email's Host Name, Port, and User name and Password if being used.
- Send Settings: enter the number of email retries in sending and the Retry Timeout in milliseconds (the default is 1000ms). If you want to disable the Retry Timeout, enter 0 in this field.
- Click OK to close this screen. You will see the Provider Information screen.

- Report Settings:
  - Click Configure next to Report Settings to open the screen below.



a. Click Configure next to Email Report Settings to set up automatic emailing of bills and/or usage reports. The screen below opens.


Default Report Email Settings
An automated email can be sent to a customer when each new report is generated. You may define the subject and body for the email for each report type here. You must select enable for each report type to send the email.
Report
Bill Report
Enable
Subject
Bill Report
Body
Bill Report
OK
Exit

- Select Bill Report or Usage Report from the pull-down menu.
- Click the Enable checkbox to set the report to be emailed automatically.
- Enter a Subject line and Body text that will appear in the email.
- Click OK to save the settings. The screen closes.

NOTE: If you want to send both Bill Report and Usage Report, repeat this process.

b. In the Report Settings screen, you have the option to enter a Due Period. If you want to do so, click the checkbox next to Display Due

Period in Bill and enter the number of days from the bill's origination date until the due date.

c. You also have the ability to enter optional text that you want to be printed on the bill. If you want to do so, click the checkbox next to Enable Bill Notes and enter the text you want printed on the bill in the Notes field.

d. Click OK to save your selections. You will be returned to the Provider Information screen.

- Click Select to choose a company logo for the bill.
  NOTE: The image must be 256x128 pixels in size. If it is not, the image will be scaled by the application, which may result in the image not looking the way you want.

5. Click Store to save your entries and then click Exit to close the screen.

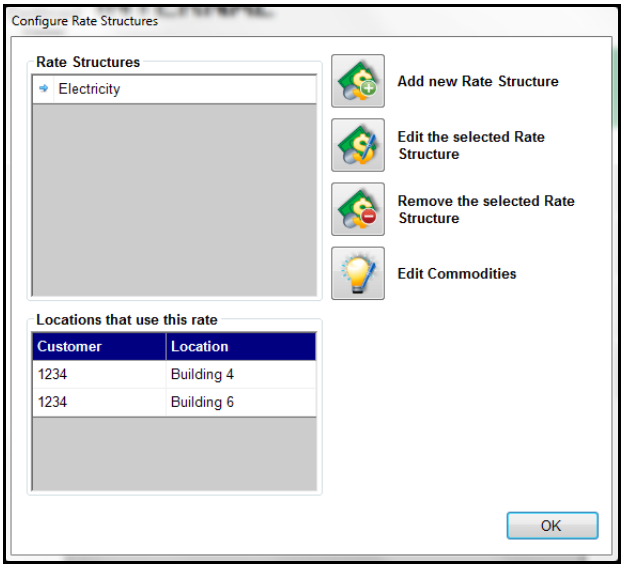
The automatic Bill Report and Usage Report email feature lets you generate hundreds of automated bills or energy reports. You can configure the system to send out bills to users automatically on a monthly basis. This feature provides you with an automated accounting service and eliminates any need for third party billing providers. You receive feedback of successful transmission for accounting purposes and can set up a cc address so that you receive a copy of the bill or usage report.

4.2: Set Up Rate Structures

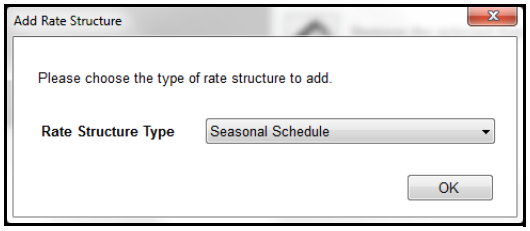
The next step is creating rate structures that will be applied to billed usage at locations.

- A rate structure is the way in which costing is calculated in monetary numbers. For example, if in an American jurisdiction, the rates will be set up in US dollars.
- Each utility has a different method of calculating rates for electrical usage. For this reason, the user can set up the rate structure to mimic what the utility is generally doing.
- You can set up one rate structure for each commodity at a location.
- Multiple locations can use the same rate structure.

1. From the EnergyReporter Settings Editor main screen, click the Edit Rate Structures icon.

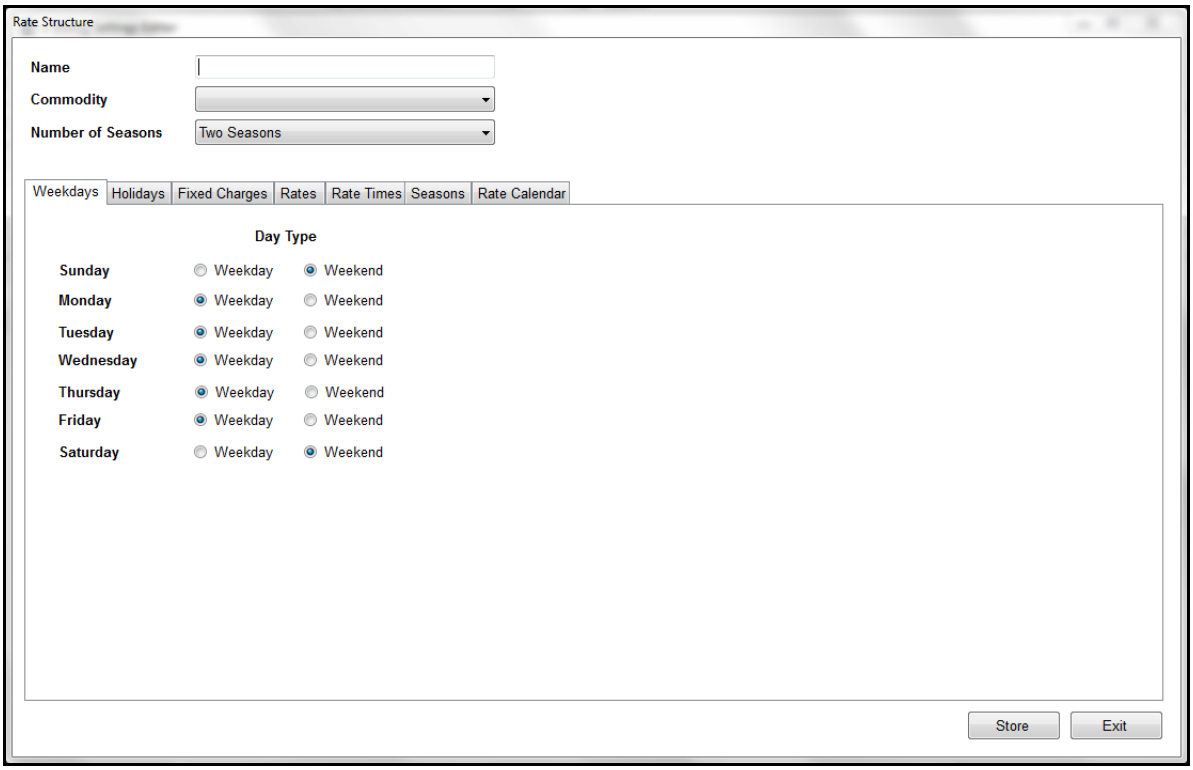


2. If you have already set up rate structures, you will see those in the box on the left. To add a new rate structure, click the Add New Rate Structure icon.



3. Select Seasonal Schedule or Flat Rate from the pull-down menu and click OK.

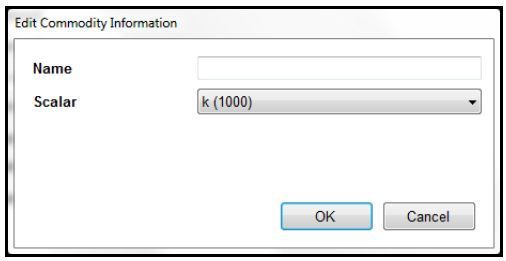
   - Select Seasonal Schedule to set up a rate structure with different rates for different times of the day, week, and/or year. Then continue with step 4.
   - Select Flat Rate to set up a rate structure with a single rate only (no On Peak/Off Peak, Seasons, Weekend/Weekday or Holiday rates). Then go to step 6.



4. After selecting Seasonal Schedule, you'll see the screen above. Use this screen to set up all of the information for this rate. Do the following:

   - Enter a name for the rate structure; this name will appear on the bill.
   - Select Commodity from the pull-down menu. A commodity is a usage value the software uses when computing the rates for a bill from the imported Energy or other commodity data. You can select an existing commodity, or Create New. For Energy usage, select kWh. When the bill is generated, the software uses the rate structure for the commodity, e.g., kWh, to determine the charge for the amount of usage the customer has for the billing period, e.g., total kWh.

If you select Create New, you will see the screen shown below, which lets you set up a new commodity to use.



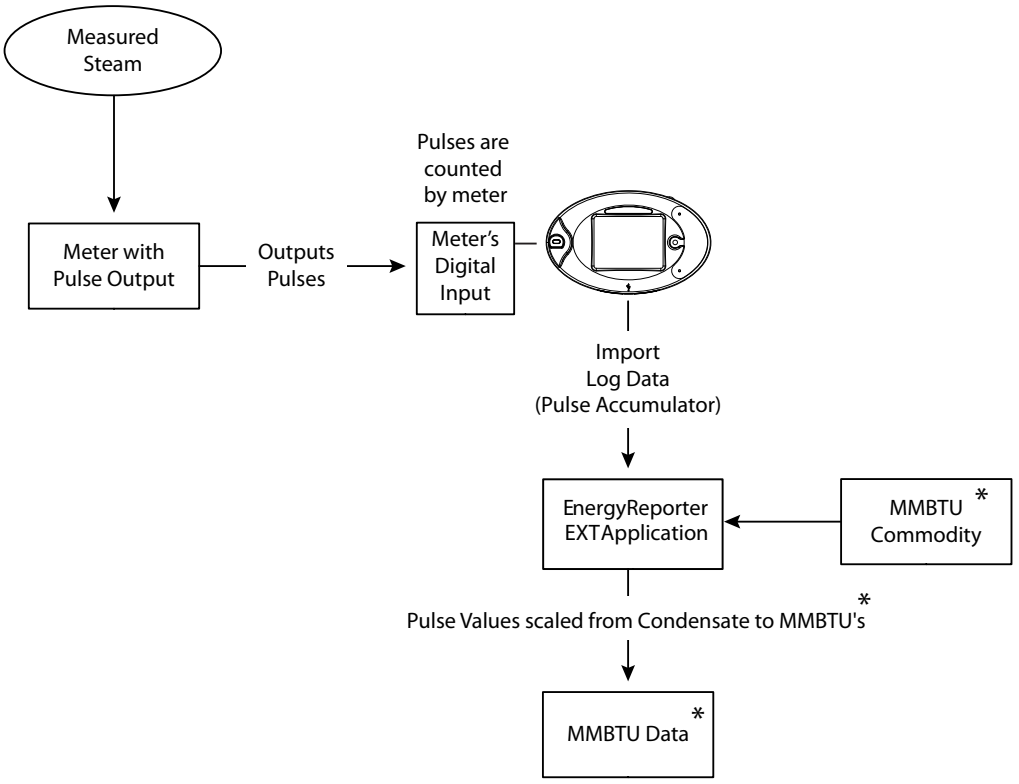
a. Enter a name for the new commodity.

b. Select the scalar from the pull-down menu - you can select Unit (1), k(1000), M(1000000) or Custom (Infinity). If you select custom, another field opens up on the screen for you to enter the Custom Scalar value.

The scalar you select is applied to the commodity's usage values for all of the meters. This is important because the meters themselves may have been set up with different scaling values. The scalar insures that the usage values will all be scaled the same way in the EnergyReporter EXT application.

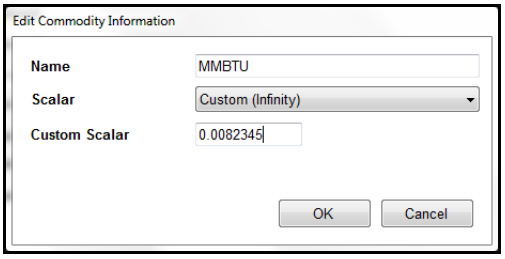
When you are tracking usage other than Energy, a custom scalar can be used to change the unit measured. For example, if you are tracking Condensate (steam), the meter's pulse accumulator channel, i.e., Digital Input, records the number of pulses coming from the Condensate meter which is measuring the steam directly. But you may need to convert the pulse accumulation value to MMBTUs for your billing. In this case, you would use the scalar to convert the number of pulses to the MMBTU usage value. See the figure and example screen on the next page.

Pulse Accumulation Measurement Example
-This example converts measured condensate to MMBTU's



* To convert condensate to MMBTU, configure the scalar for the commodity.
This value should be the value to convert 1 pulse to MMBTU.
For example, if 1 pulse = 1 kgallon of steam, and 1 gallon of steam equals 8.2345 MMBTU, then the scalar should be 0.0082345.

Figure 4.2: Scalar Example for Commodities Other Than Energy



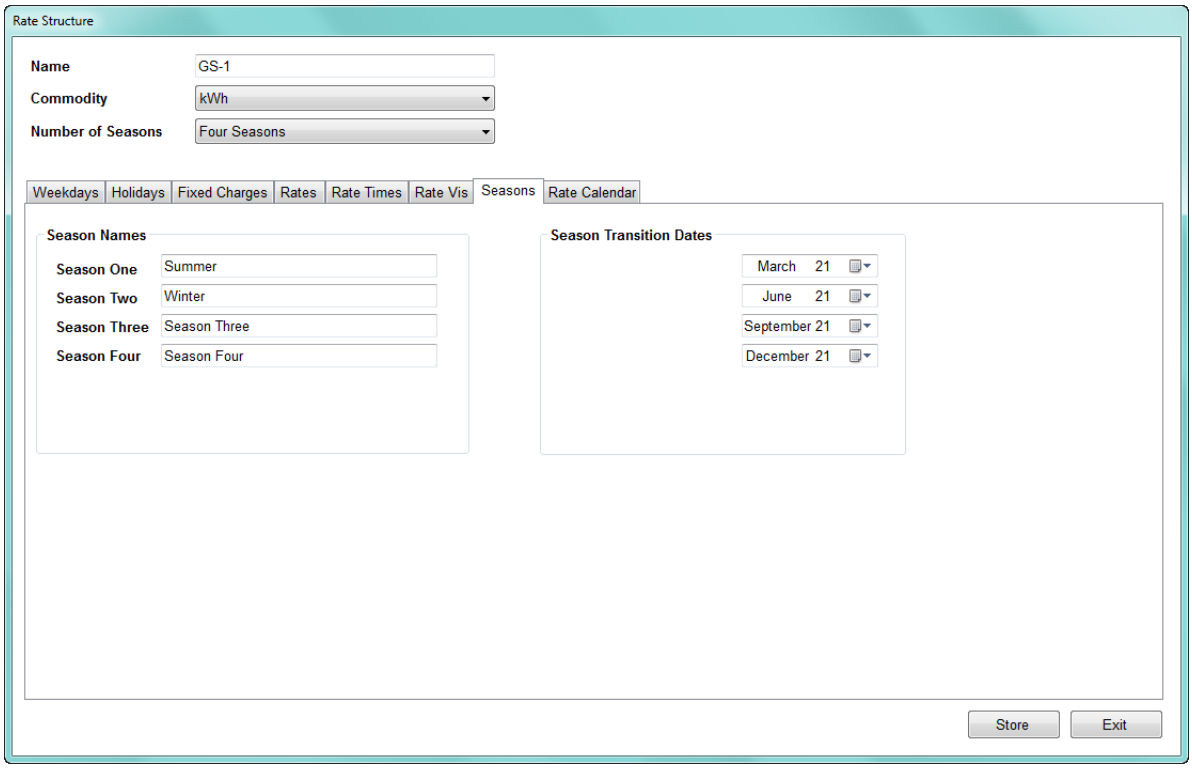
c. Click OK to save your entries and close the screen (click Cancel if you want to close the screen without saving your entries).

- The other settings for rate structure are as follows:

Seasons Setting

Some utility companies bill their customers higher rates at different times of the year. The reason for this is that it may be more costly for utilities to generate or buy electricity during peak seasons.

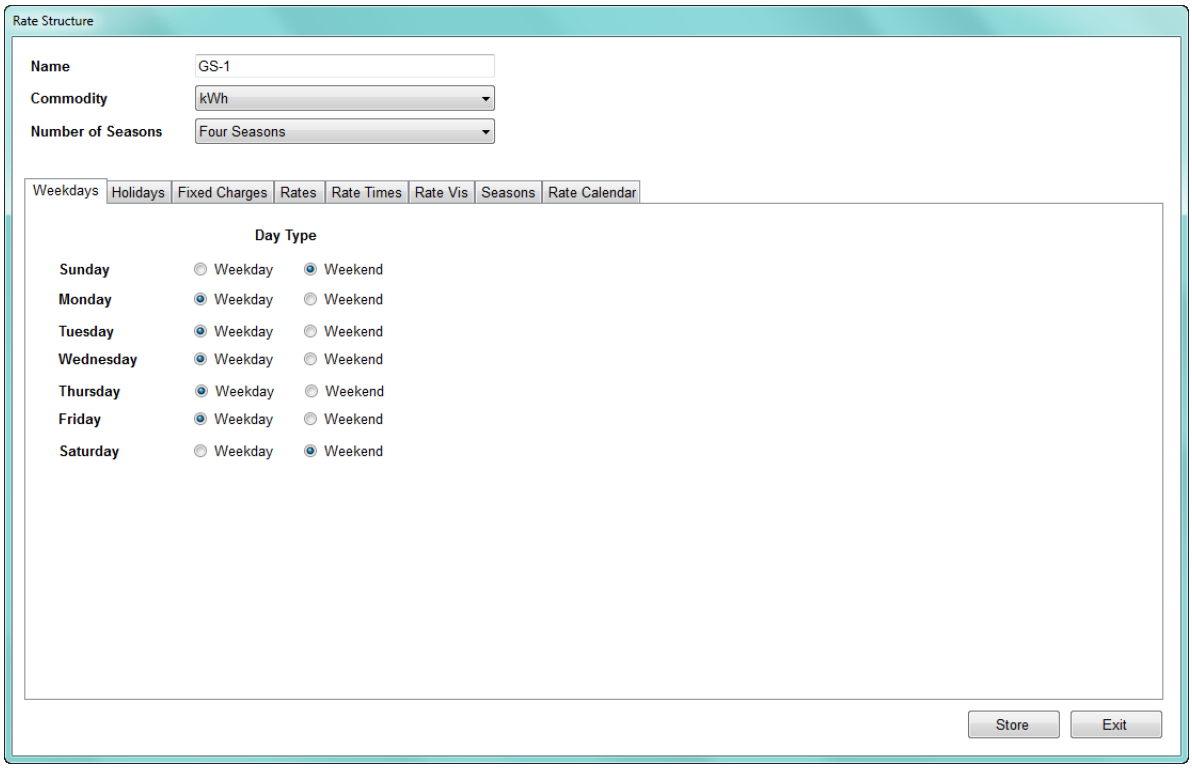
The Seasons setting lets you set up different rates for up to four different times of the year that you may need in your rate jurisdiction. Select the number of seasons from the pull-down menu. If you select more than one season, you will see a Seasons tab that you will use to set the seasons' dates. You use the Rates tab to set different On-Peak and Off-Peak rates for each season, and you use the Rate Times tab to assign On-Peak and Off-Peak to different days and times of the day, for each season.



Weekdays/Weekends

A weekday is usually billed at a higher time of use rate than a weekend. For this reason, you can select what days are designated as a weekend in your jurisdiction.

Click the Weekdays tab to designate days as weekday or weekend (this is the tab view you see when the screen first opens). You use the Rates tab to set different rates for weekends and weekdays.



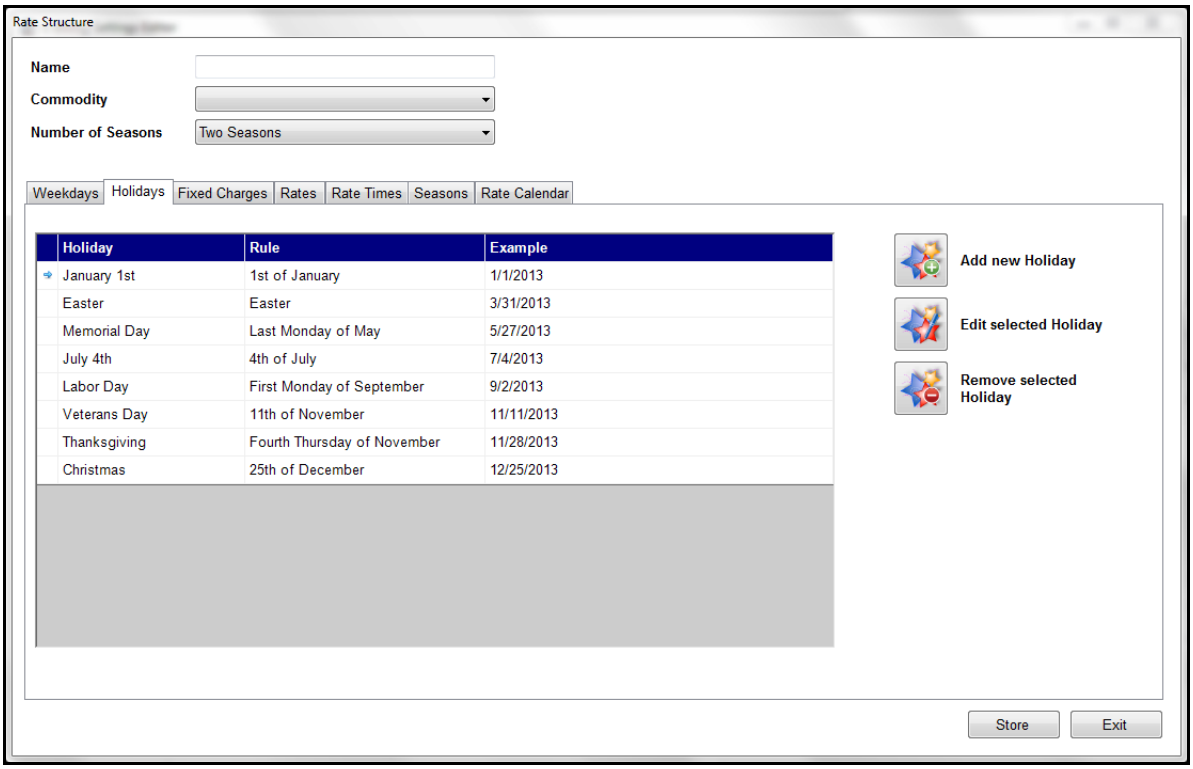
Holidays

A holiday is a day that is billed at a different rate than a weekday or a weekend. Typically, it is considered an off-peak time, which will be billed at a lower rate.

The EnergyReporter EXT application configures holidays based on a perpetual calendar. A perpetual calendar allows you to set up the holidays once and from then on have the software determine all the future holidays based on the rules you set up.

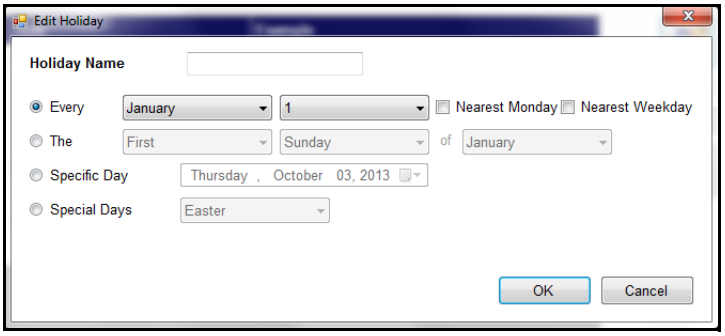
You can set up different Holiday rates for different seasons.

Click the Holidays tab.



Use this screen to designate days that will use the Holiday rate. Once you set up the holidays you use the Rates tab to enter the Holiday rate.

a. Click the Add New Holiday icon.



b. Enter a name for the holiday.

c. You have these options for setting up the holiday:

- Click the radio button next to Every and select the month and day from the pull-down menus, e.g., January 1. The nearest Monday and Nearest Weekday checkboxes are used for holidays that are changed to another day of observance if they fall on a Saturday or Sunday. If the holiday will be celebrated on the following Monday if it falls on a weekend, click the Nearest Monday checkbox. If the holiday will be celebrated on the nearest weekday if it falls on the weekend (i.e., Friday if the holiday falls on Saturday, or Monday if it falls on Sunday), click the Nearest Weekday checkbox.

- Click the second radio button and select First, Second, Third, Fourth, Fifth, or Last from the first pull-down menu; select the day of the week from the second pull-down menu; and select the month from the third pull-down menu, e.g., The Third Thursday in November for U.S. Thanksgiving Day.

- Click the radio button next to Specific Day and click the pull-down menu to open a calendar that lets you choose the day of the holiday that only occurs once.

- Click the radio button next to Special Days to select a holiday that doesn't follow any of the above rules, such as Easter.

d. Click OK to save the holiday and return to the Holidays tab screen.

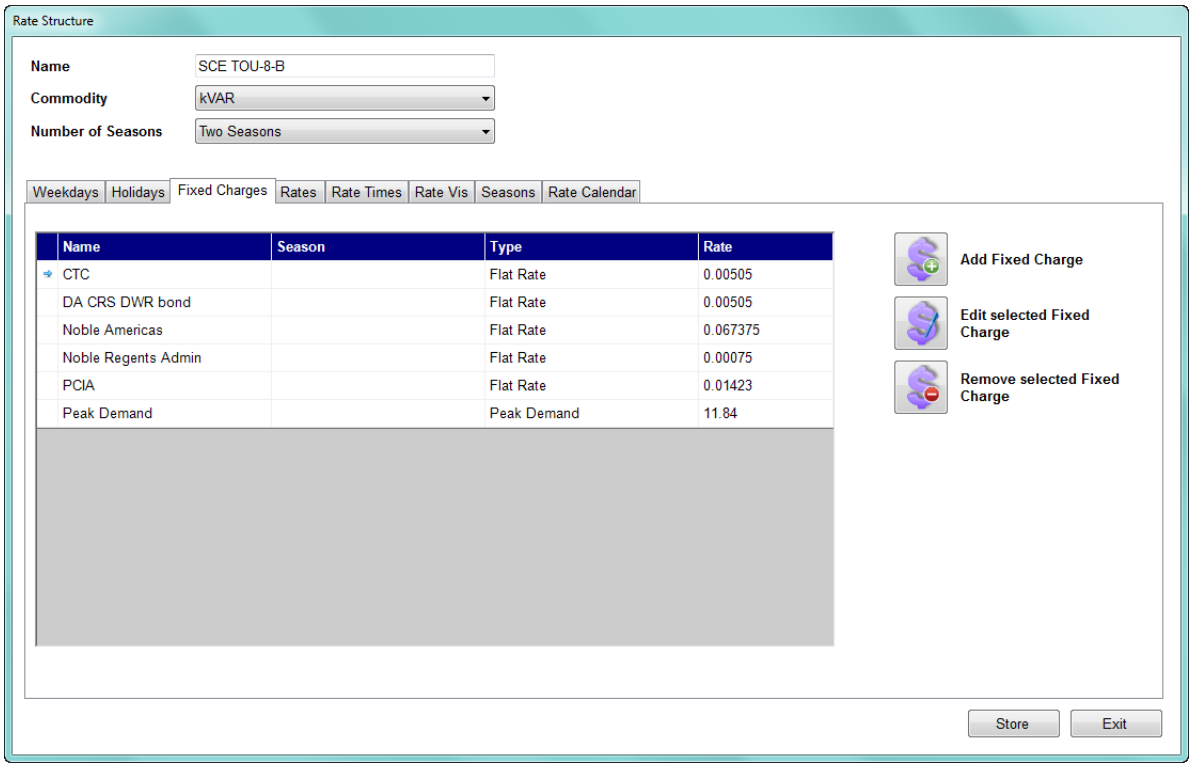
NOTES:

- To edit a holiday, click on the holiday in the list and click the Edit Selected Holiday icon. You will see the same screen as when you are adding a holiday, but it will show the holiday's settings. Change what you want and click OK to save the changes.
- To delete a holiday, click on the holiday in the list and click the Remove Selected Holiday icon. You will see a Confirmation window asking if you are sure you want to remove the holiday - click Yes to remove; click No to keep the holiday.

Fixed Charges

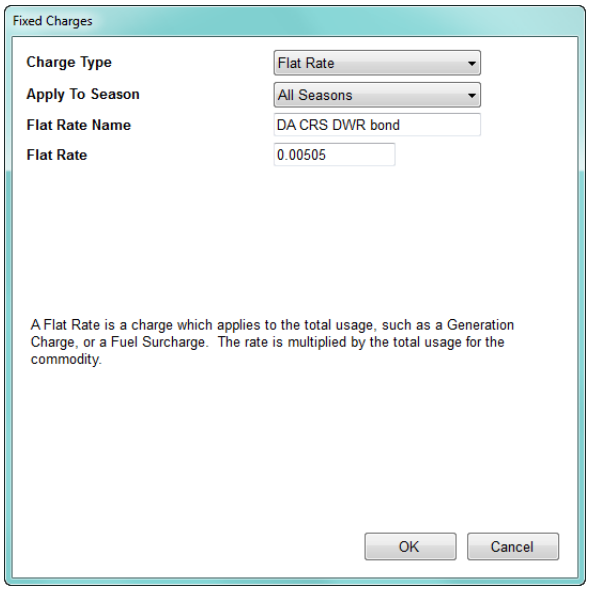
A fixed charge is a charge that is added onto the bill.

Click the Fixed Charges tab to configure single charges you want to be applied to the commodity when the bill is generated.



You can add a fixed charge, edit an existing fixed charge, or remove an existing fixed charge. You can also assign the fixed charges to any of the seasons you have set up.

a. Click the Add Fixed Charge icon. You will see the screen shown below.

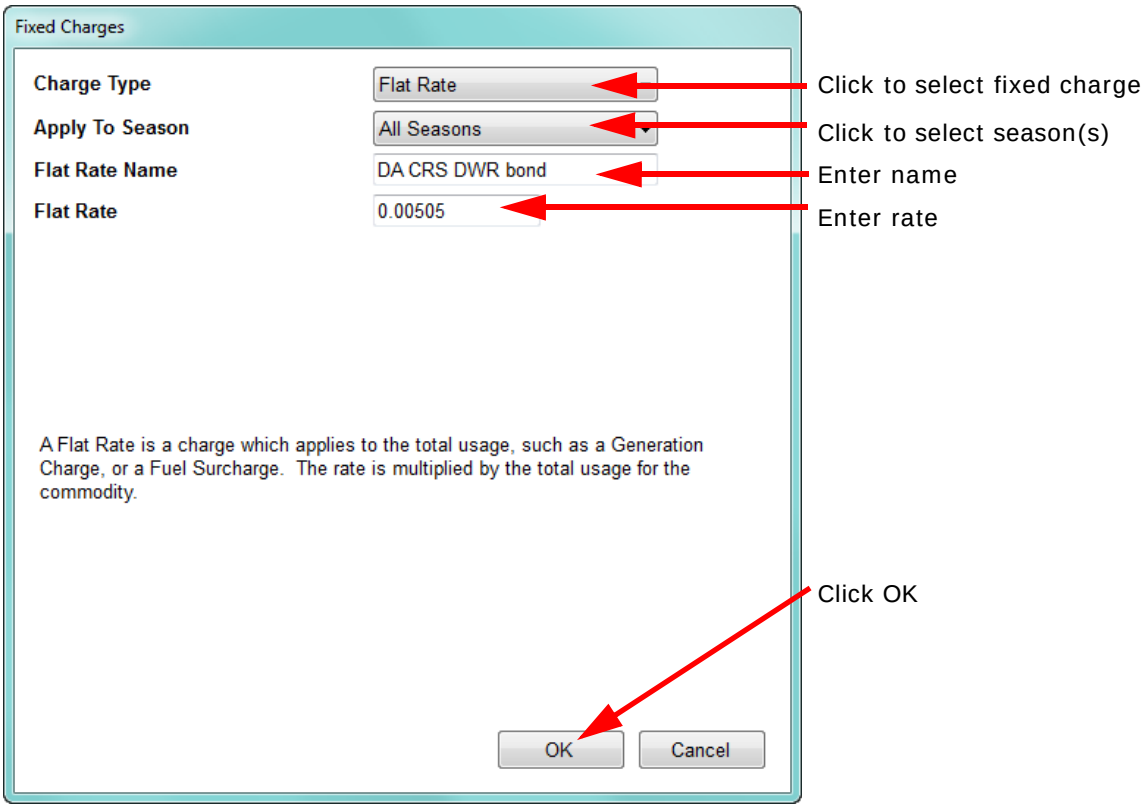

Fixed Charges
Charge Type
Flat Rate
Apply To Season
All Seasons
Flat Rate Name
DA CRS DWR bond
Flat Rate
0.00505
A Flat Rate is a charge which applies to the total usage, such as a Generation Charge, or a Fuel Surcharge. The rate is multiplied by the total usage for the commodity.
OK
Cancel

b. Select the Charge Type from the pull-down menu. You can select Fixed, **Peak Demand**, Flat Rate, Tax, Coincidental Peak Demand, or Tiered Rate:

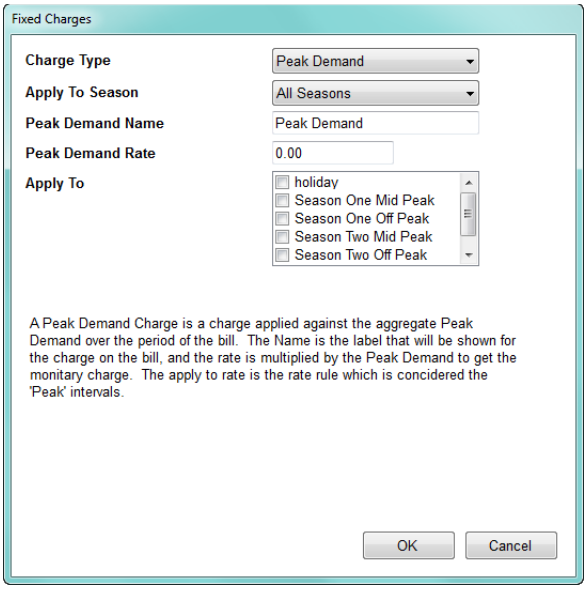
- Fixed: select this to add a single charge that is added to the bill when it is generated, regardless of the usage amount, e.g., processing fee.
- **Peak Demand**: select this to enter a **Peak Demand surcharge**, which is an additional charge applied to Peak (highest amount) demand during the billing period (see step d).
- Flat Rate: select this to add a charge that applies to the total usage, e.g., a Generation charge or Fuel surcharge. This rate is multiplied by the total usage when the bill is generated.
- Tax: select this to enter a tax percentage that will be applied to the total when the bill is generated, i.e., multiplied by the total dollar amount on the bill for the commodity, and added to the bill.
- Coincidental Peak Demand: select this to compute the Peak Demand time from a meter at another location, e.g., a Utility meter. The time of the charge comes from the Utility meter, but the charge is applied to the sum of the location's meter(s)' usage. See the example on page 5-18.

- Tiered Rate: select Tiered rates to indicate charges that are dependent on the amount of usage during the Bill period. For example, a multiple tiered rate may be defined to encourage energy conservation by charging higher rates for customers that exceed what is considered typical consumption.

c. For charge types Fixed, Flat Rate, and Taxed, you must enter the Charge Name, select what season(s) to apply it to from the pull-down menu, and enter the Rate (or Percentage for Tax).


Fixed Charges
Charge Type
Flat Rate
Apply To Season
All Seasons
Flat Rate Name
DA CRS DWR bond
Flat Rate
0.00505
A Flat Rate is a charge which applies to the total usage, such as a Generation Charge, or a Fuel Surcharge. The rate is multiplied by the total usage for the commodity.
OK
Cancel
Click to select fixed charge
Click to select season(s)
Enter name
Enter rate
Click OK

d. If you select **Peak Demand**, the screen changes as shown below.


Fixed Charges
Charge Type
Peak Demand
Apply To Season
All Seasons
Peak Demand Name
Peak Demand
Peak Demand Rate
0.00
Apply To
holiday
Season One Mid Peak
Season One Off Peak
Season Two Mid Peak
Season Two Off Peak
A Peak Demand Charge is a charge applied against the aggregate Peak Demand over the period of the bill. The Name is the label that will be shown for the charge on the bill, and the rate is multiplied by the Peak Demand to get the monitary charge. The apply to rate is the rate rule which is concidered the 'Peak' intervals.
OK
Cancel

The charge's name defaults to **Peak Demand**, though you can change it if you want. The name appears on the bill next to the **Peak Demand charge**.

e. Select the season(s) to apply the **Peak Demand** charge to, enter the **Peak Demand rate**, and click the checkbox(es) (rate periods) you want the Peak Demand rate applied to. You can apply it to Holiday, Peak and/or Seasonal Off Peak usage. The Peak Demand rate you enter will be applied to peak demand in the selected rate periods when the bill is generated, i.e. the Peak Demand usage is multiplied by the Peak Demand rate to get the Peak Demand charge.

f. **Coincidental Peak Demand** is a charge applied against the Peak Demand over the period of the bill, where the Peak Demand is computed based on the configured Utility meter, rather then the meters at the location.

For example: 2 locations, with 4 meters, total.
Location 1 has 1 meter, which is the Utility meter that the Peak Demand is based on. The demand values for this meter are shown in the table below.

Time	kWh Reading
12:00	15kWh
12:15	17kWh
12:30	16kWh
12:45	14kWh

Location 2 has 3 meters. The meters' demand values are shown in the table below.

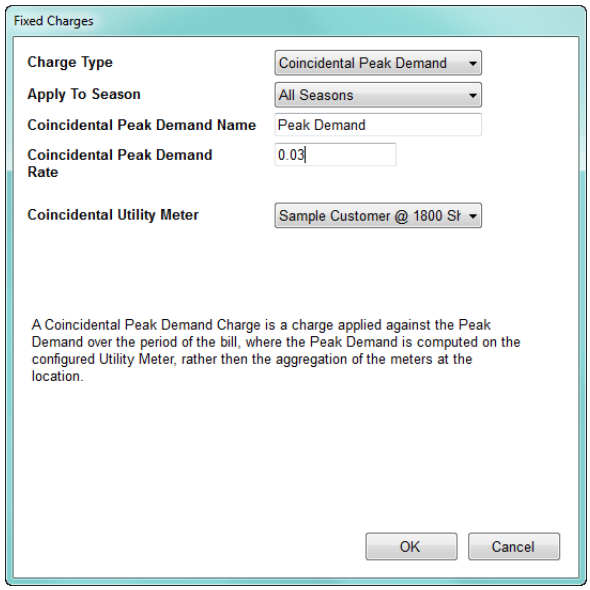
This is the time of the Utility meter's Peak Demand

Time	kWh Reading		
	Meter 1	Meter 2	Meter 3
12:00	7kWh	8kWh	3kWh
12:15	4kWh	3kWh	1kWh
12:30	5kWh	1kWh	8kWh
12:45	15kWh	20kWh	9kWh

The values in this row are added together and then will have the fixed rate charge applied to them

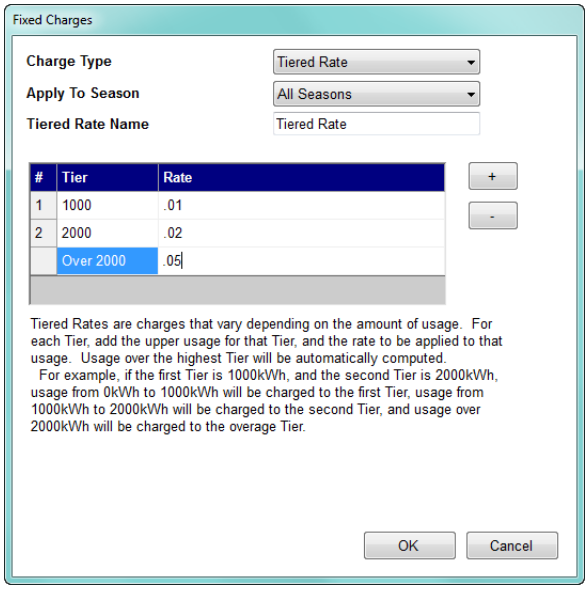
When the Coincidental Peak Demand fixed charge is set up using the Utility meter, and this rate structure is applied to Location 2, a bill generated for Location 2 will have a Coincidental Peak Demand value of (4+3+1) 8kWh x the fixed charge rate, since the Peak Demand at meter 1 (Location 1) is at 12:15.

NOTE: The Utility meter can be at any location.


Fixed Charges
Charge Type
Coincidental Peak Demand
Apply To Season
All Seasons
Coincidental Peak Demand Name
Peak Demand
Coincidental Peak Demand Rate
0.03
Coincidental Utility Meter
Sample Customer @ 1800 Sl
A Coincidental Peak Demand Charge is a charge applied against the Peak Demand over the period of the bill, where the Peak Demand is computed on the configured Utility Meter, rather then the aggregation of the meters at the location.
OK
Cancel

After selecting Coincidental Peak Demand, select the season(s) to apply it to, enter a Name and Rate for the Coincidental Peak Demand, and then choose the coincidental Utility meter from the pull-down menu.

g. **Tiered Rate**: a tiered rate gets higher (more expensive) as the amount of energy consumed increases. This rate type is typically used to encourage customers to conserve usage. You would use the Tiered Rate option to set up charges that vary depending on the amount of usage during the Bill period, charging higher rates when their usage exceeds a certain amount.


Fixed Charges
Charge Type
Tiered Rate
Apply To Season
All Seasons
Tiered Rate Name
Tiered Rate
Tier Rate
1 1000 .01
2 2000 .02
Over 2000 .05
+
-
Tiered Rates are charges that vary depending on the amount of usage. For each Tier, add the upper usage for that Tier, and the rate to be applied to that usage. Usage over the highest Tier will be automatically computed.
For example, if the first Tier is 1000kWh, and the second Tier is 2000kWh, usage from 0kWh to 1000kWh will be charged to the first Tier, usage from 1000kWh to 2000kWh will be charged to the second Tier, and usage over 2000kWh will be charged to the overage Tier.
OK
Cancel

Select which season(s) to apply the Tiered Rate to, give the Tiered Rate a name, and enter the Tiers information: the highest amount of usage in the Tier (entered in the Tier field) and the rate for the Tier (entered in the Rate field).

NOTE: The Tiered Rate screen's default is Tiers 1 and 2 and an overage Tier (unnumbered.) Click the **+** button to add a Tier and then enter the upper usage amount and rate for the Tier. You can click the **-** button to remove a tier.

For example, in the screen above, Tier 1's rate of $0.01 is applied to usage up to 1000, Tier 2's rate of $0.02 is applied to usage from 1001 - 2000, and the overage Tier's rate of $0.05 is applied to usage from 2001 up. Let's say the commodity is kWh. Since the rate is multiplied by the amount of usage to get the final charge, you can see the effect of the tiered rate charges in the following table:

Customer	kWh Usage	Tiered Rate Surcharges	Added to Monthly Bill
#1	900	$0.01 x 900	$9.00
#2	1500	$0.01 x 1000 $0.02 x 500	$20.00
#3	2500	$0.01 x 1000 $0.02 x 1000 $0.05 x 500	$45.00

h. Click OK to save your settings and return to the Fixed Charges tab screen. Your new charge is listed on the screen.

NOTES:

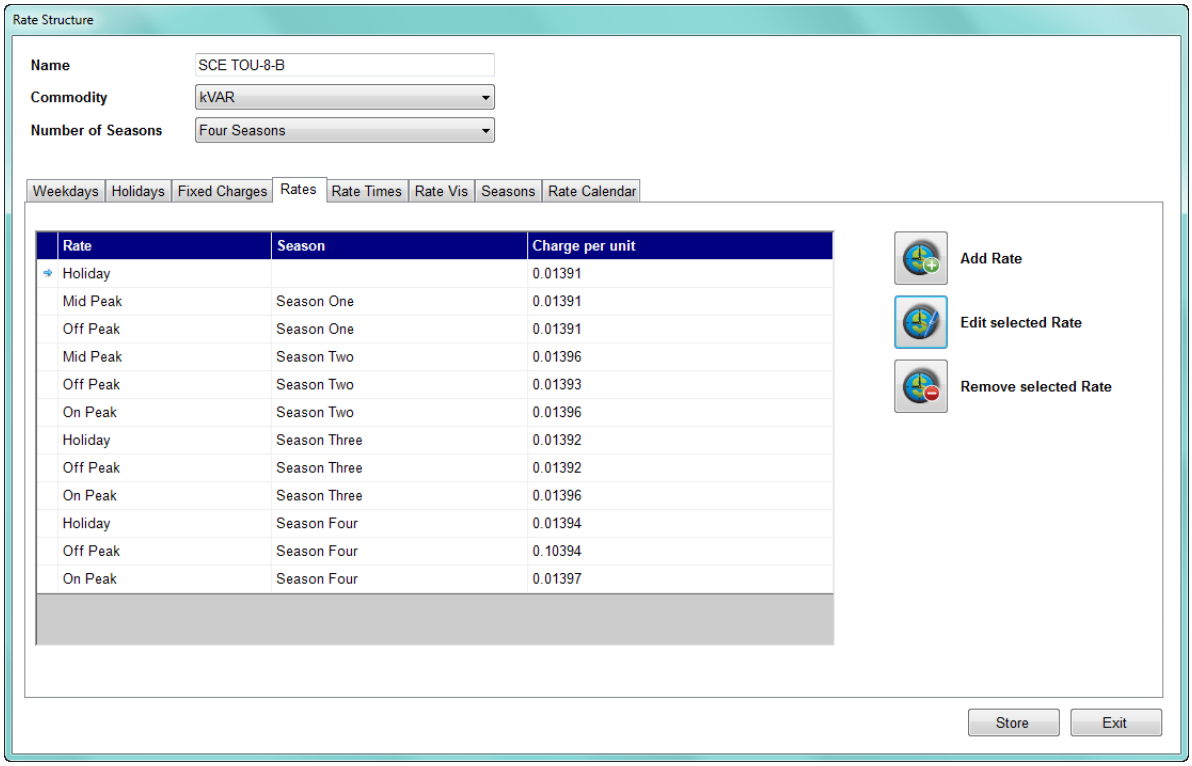
- To edit a charge, click on the charge in the list and click the Edit Selected Fixed Charge icon. You will see the same screen as when you are adding a fixed charge, but it will show the charge's settings. Change what you want and click OK to save the changes.

- To delete a charge, click on the charge in the list and click the Remove Selected Fixed Charge icon. You will see a Confirmation window asking if you are sure you want to remove the charge - click Yes to remove; click No to keep the charge.

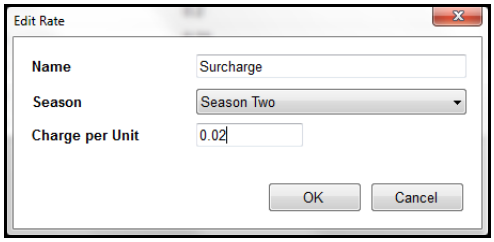
Rates

Rates are the amount of money charged per usage commodity. For instance, with electricity, the rate is usually an amount of cents per kWh. On Peak rates often cost more than Off Peak rates. If you are not using Time of Use based rates, then set only one rate and amount. The charge per unit is in dollars and cents, so for 5 cents, enter 0.05.

Click the Rates tab to configure specific rates: by Default, On Peak, Off Peak, and Holiday rates. If you have set up seasons, you can configure rates for each season; you can also configure Holiday rates for each season. The rates will be applied to the usage when the bill is generated, e.g., if you set a rate for Season 1 Off Peak, that rate is applied to all usage that occurs during Off Peak times, during the period designated as Season 1.



a. If you want to use more rates than Off Peak and On Peak, click the Add Rate icon.



b. Enter a name for the rate; select the Season the rate will be applied to (if you selected only one season, you will only be able to choose Season One); enter the charge per unit. For Energy usage, this is the charge per kWh.

c. Click OK to save the rate and return to the Rates tab screen. The rate you added is now listed in the screen. Make sure you assign Rate Times for this new rate (see below).

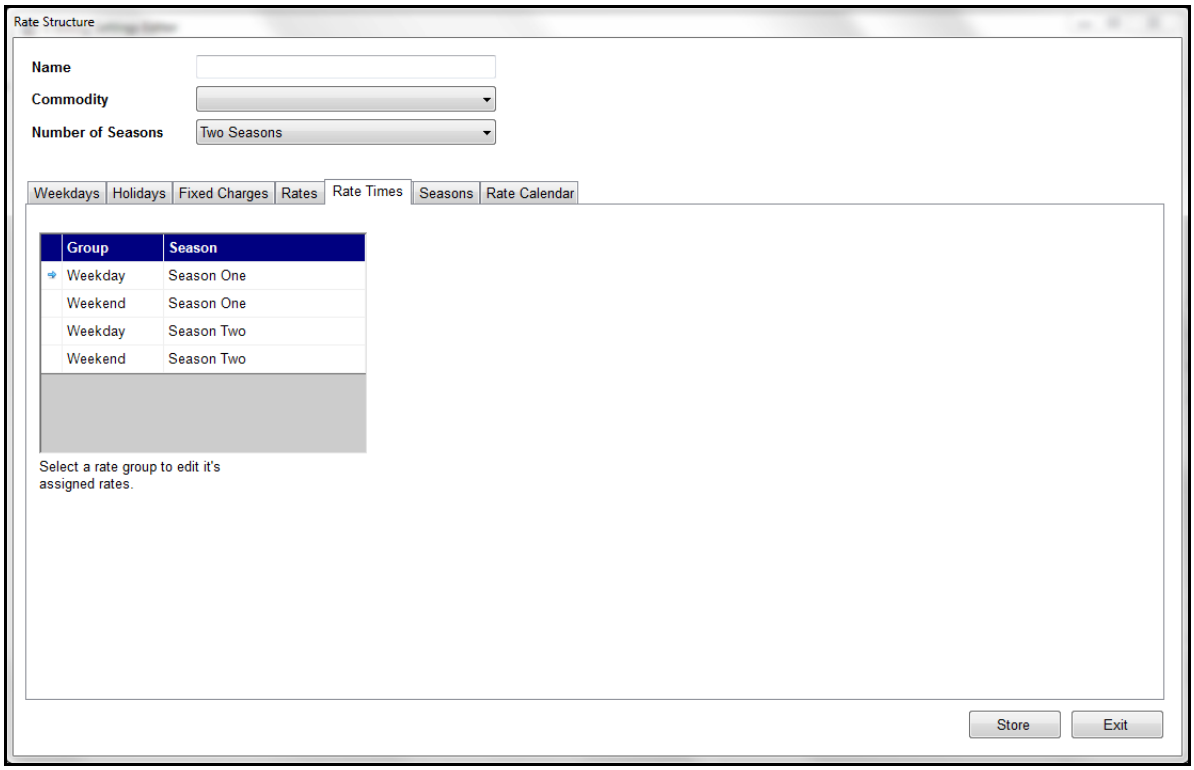
NOTES:

- To edit a rate, click on the rate in the list and click the Edit Selected Rate icon. You will see the same screen as when you are adding a rate, but it will show the rate's settings. Change what you want and click OK to save the changes.

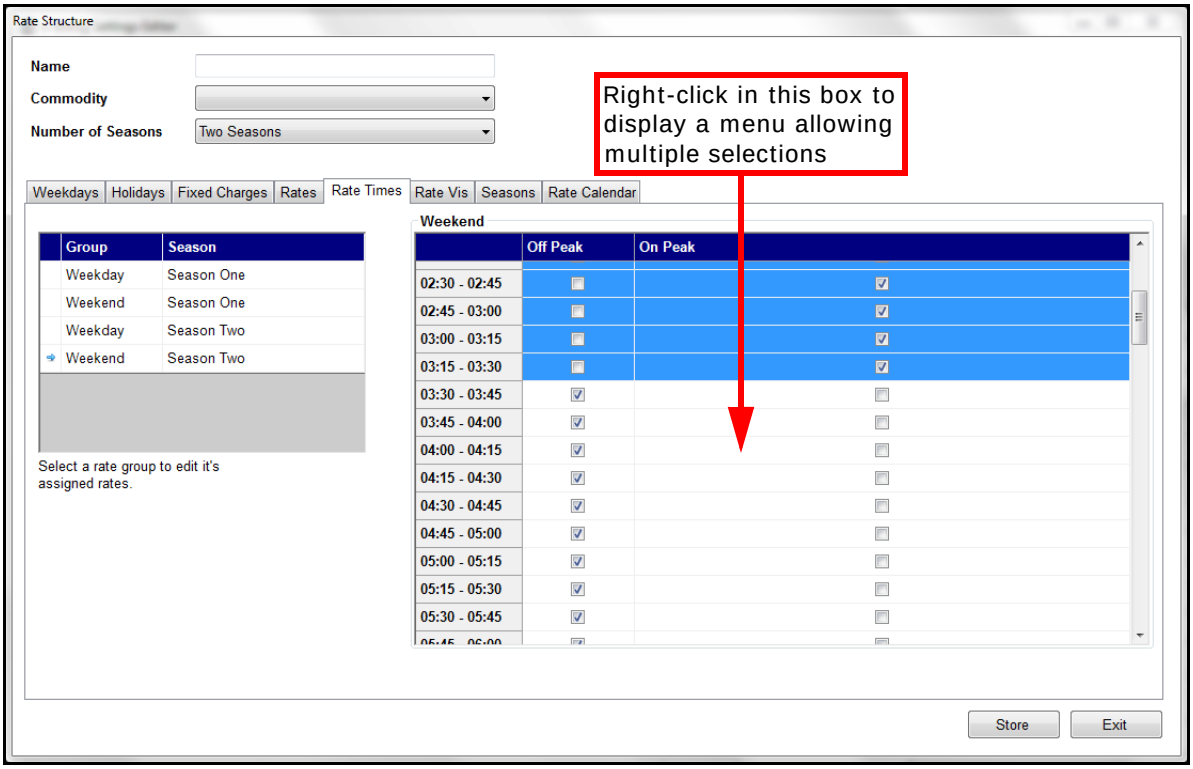
- To delete a rate, click on the rate in the list and click the Remove Selected Rate icon. You will see a Confirmation window asking if you are sure you want to remove the rate - click Yes to remove; click No to keep the rate. If you delete a rate, the rate times assigned to it (see the following section) are reassigned to the next available rate.

Rate Times

Click the Rate Times tab to assign periods to your rates. You can assign rates to 15 minute time intervals within a day. You set rates for both weekday and week-end time intervals, as well as for both Season 1 and Season 2 if you set up two seasons for this rate structure. These settings are used to generate the bill by identifying which rate is applied to the usage for the specific time period, e.g., if you set Season 1 Weekend time intervals as all Off Peak, then any usage for Season 1 weekends is charged the Off Peak rate.



a. Click on one of the groups to display its settings on the right side of the screen.



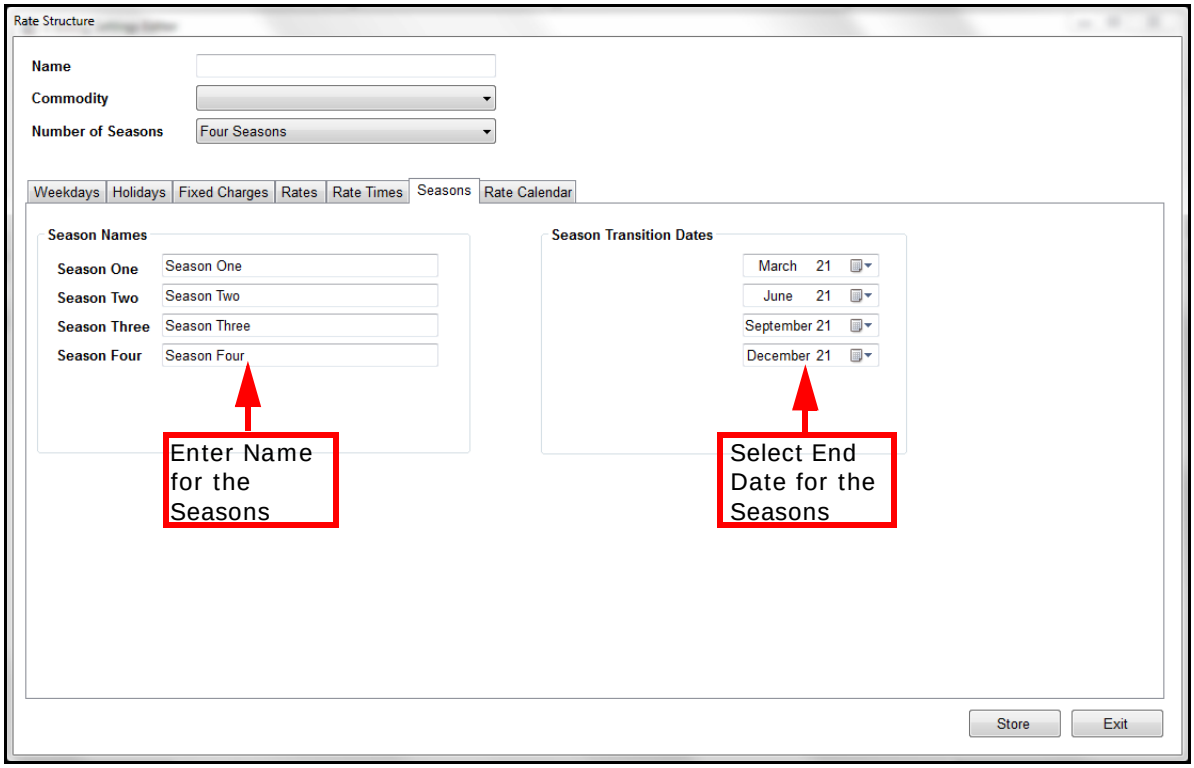
b. Click in the Off Peak or On Peak box next to a time range to change its setting. You also have the following multiple selection options:

- You can right-click in the box on the right and select “Set all rate times to either” Off Peak or On Peak.
- You can select multiple time ranges by clicking on the first rate time you want to change, then holding down the Shift key and clicking on the last rate time you want to change: the rate times you selected are now highlighted in blue. Then right-click in the box on the right and select “Set selected rate times to” either Off Peak or On Peak.

Seasons Tab

Click the Seasons tab to set up the dates for between two and four seasons. The dates for the seasons determine what rate is charged for usage in that time period. The rates are set up in the Rate Times tab, which was just explained. So, for example, if you set up two seasons, and you set a Weekday On Peak rate for Season 1 and a different Weekday On Peak rate for Season 2, the program checks the date of usage to see which rate should be applied.

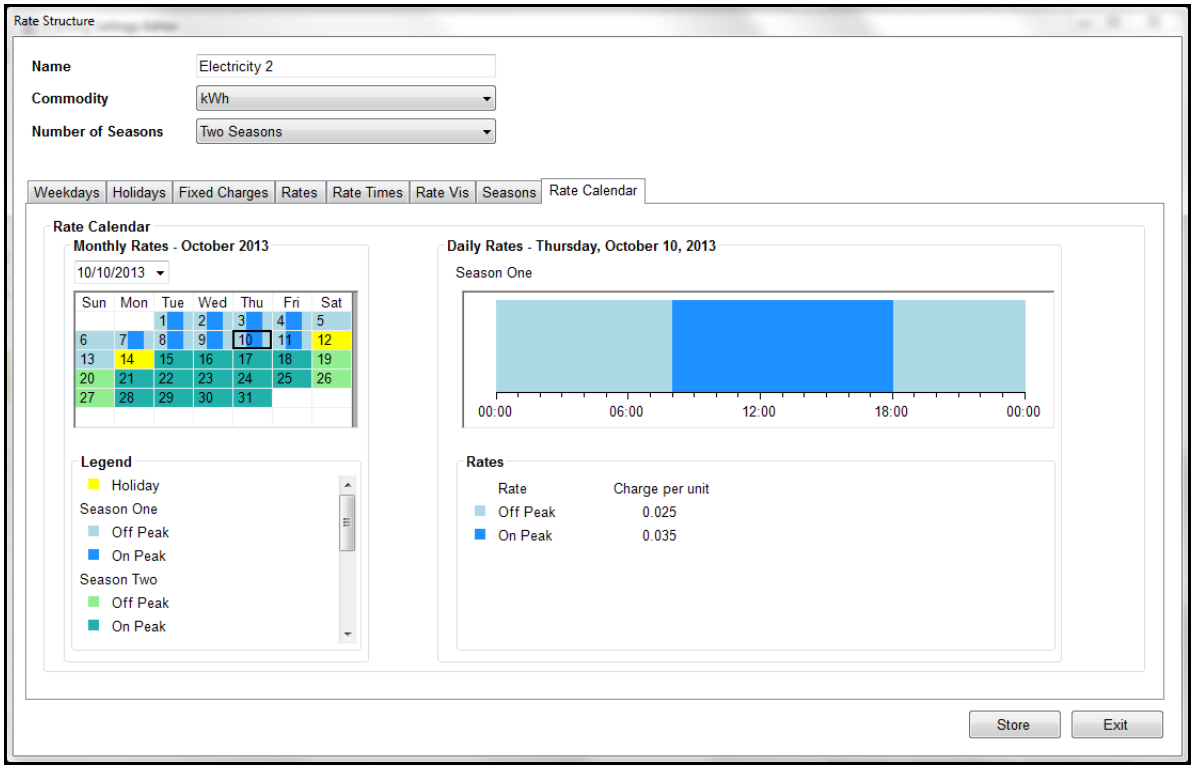
NOTE: You will only see the Seasons tab if you selected more than one season.



a. Click in the pull-down menus to display a calendar you use to select the end date for each season. This is the last day the rates for that season are applied to usage.

b. In each entry field to the right of the season, specify the name to show on the bill for that season.

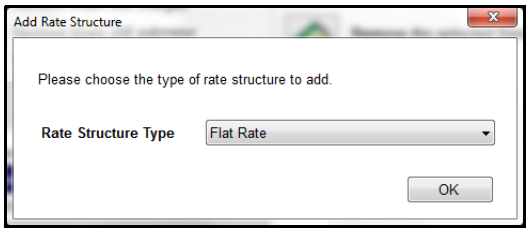
Rate Calendar



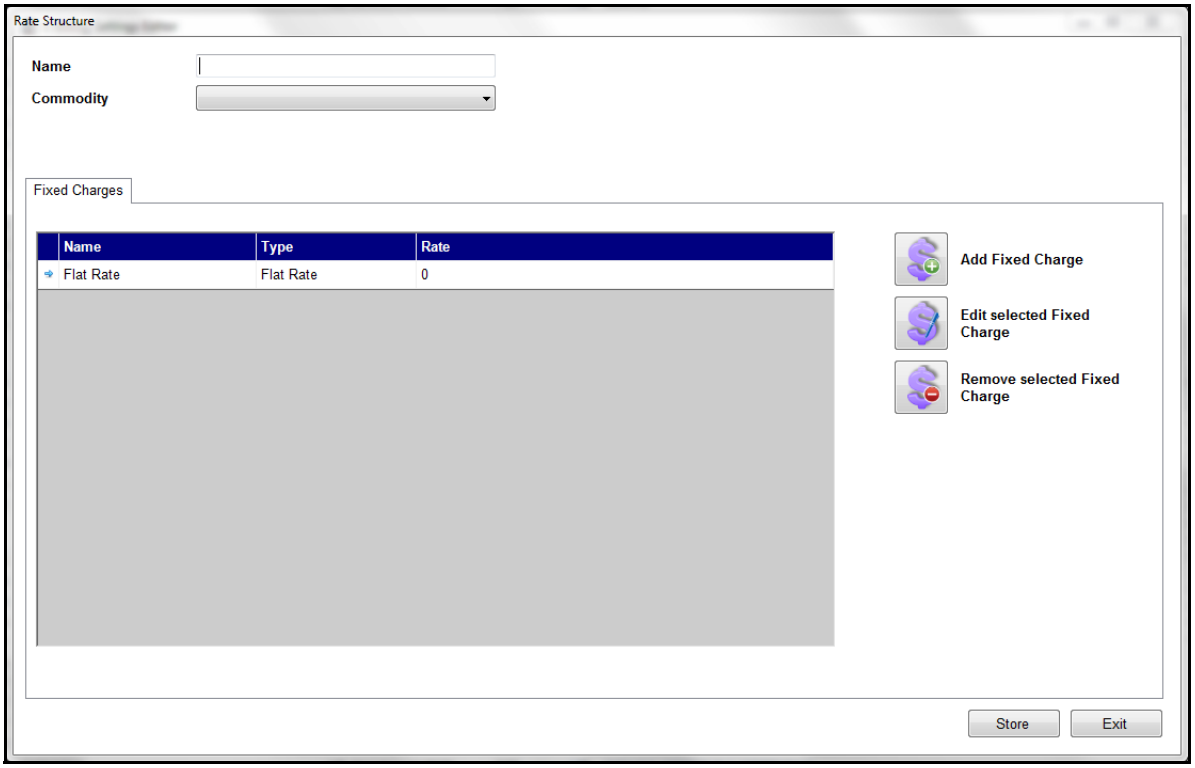
Review your rates on the rate calendar to make sure you have everything set up correctly.

5. Click Store to save your rate structure. Instructions for setting up a Flat Rate schedule follow. If you do not need this information, continue to step 8 on page 4-31.

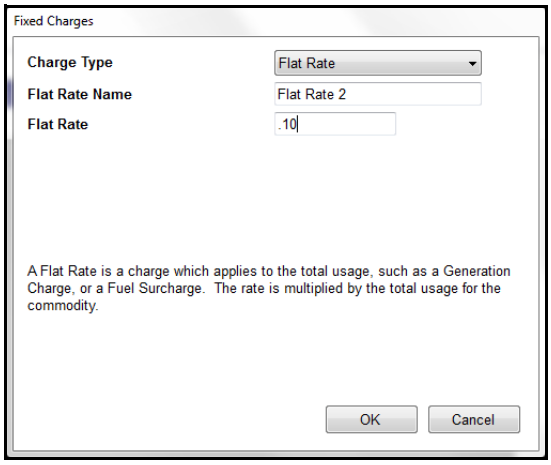
6. To set up a rate structure with Fixed Charges only (no Time of Use, such as On Peak/Off Peak, Seasons, Weekend/Weekday or Holiday rates), select Flat Rate from the Add Rate Structure pull-down menu.



You will see a screen similar to the Fixed Charges tab of the Seasonal Schedule.



a. Enter a Name for the Rate Structure, select the Commodity it will be applied to from the pull-down menu, and click Edit Selected Fixed Charge.

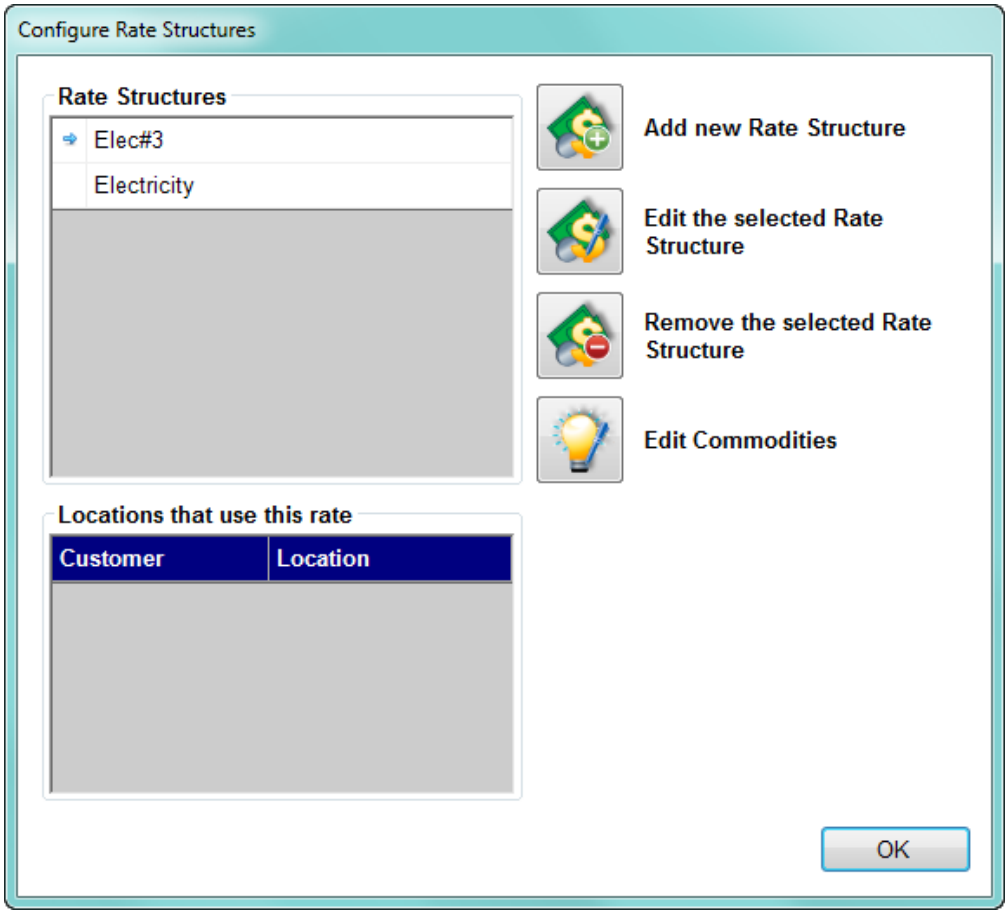

Fixed Charges
Charge Type
Flat Rate
Flat Rate Name
Flat Rate 2
Flat Rate
.10
A Flat Rate is a charge which applies to the total usage, such as a Generation Charge, or a Fuel Surcharge. The rate is multiplied by the total usage for the commodity.
OK
Cancel

b. Keep the Charge Type as Flat Rate, and enter a Flat Rate Name and Rate.

c. Click OK to save the fixed charge.

7. Click Store to save your Flat Rate rate structure.

8. Click Exit to return to the Configure Rate Structures screen. Your new rate structure is now listed in the Rate Structures box and there is a new box called Locations That Use This Rate at the bottom left of the screen. Once you assign customer locations to this rate, they are listed in the box.

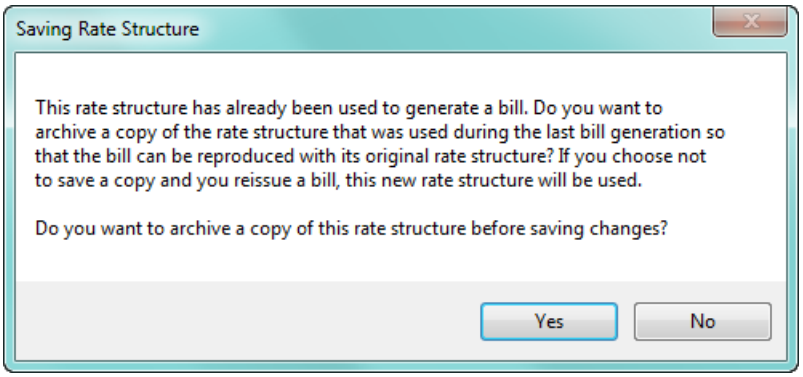


NOTES:

- To edit an existing rate structure, click on the rate structure and click the Edit the Selected Rate Structure icon. You will see the same screen as when you are adding a rate structure, but it will show the rate structure's settings. Change what you want and click OK to save the changes. Any new bills generated will use the changed settings.
    - If you edit a rate structure that has already been used for the generation of a bill, you are given the opportunity to archive the rate structure in its pre-edited condition so that previously generated bills may be reproduced using the rate structure that was in effect at the time the bill was origi-

nally generated. If you choose not to archive the edited rate structure, regenerating the bill will use the rates as defined in the newly edited rate structure. Once a rate structure has been archived, the archived copy may not be edited again.

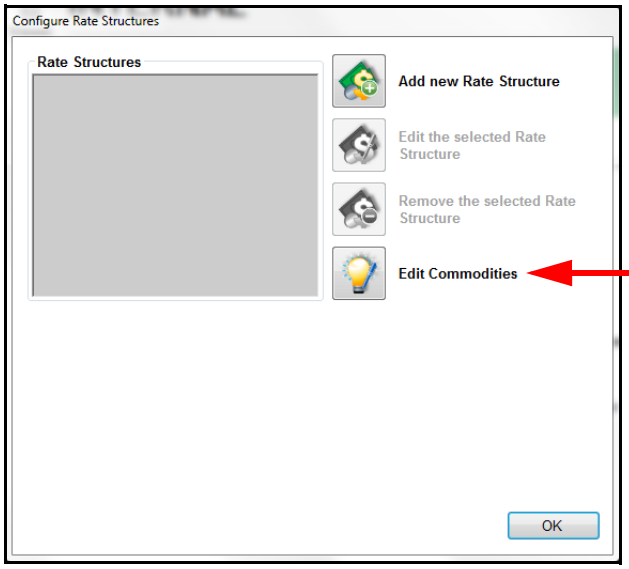
- If a rate structure has been archived, it will be used to generate cost data in the Usage Dashboard cost graphs for the billing periods when the archived rate structure was still in effect.


Saving Rate Structure
This rate structure has already been used to generate a bill. Do you want to archive a copy of the rate structure that was used during the last bill generation so that the bill can be reproduced with its original rate structure? If you choose not to save a copy and you reissue a bill, this new rate structure will be used.
Do you want to archive a copy of this rate structure before saving changes?
Yes
No

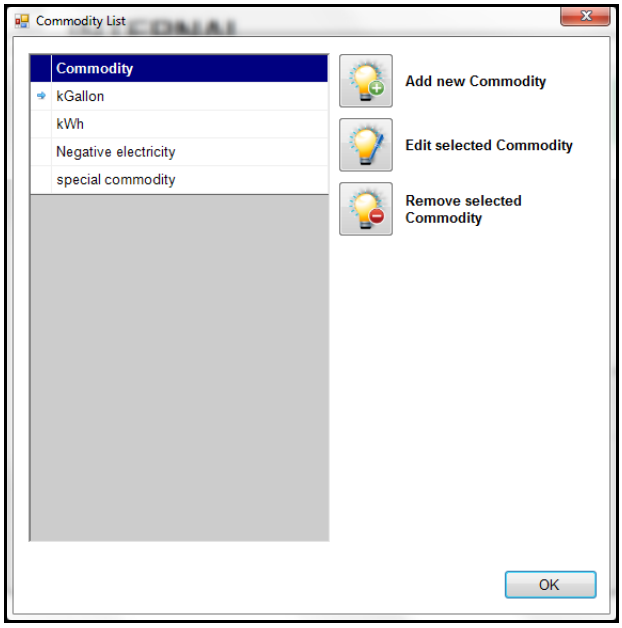
Archive Rate Structure Screen: Click Yes to Save the Rate Structure

- To delete a rate structure, click on the rate structure and click the Remove the Selected Rate Structure icon. You will see a Confirmation window asking if you are sure you want to remove the rate structure - click Yes to remove; click No to keep the rate structure. Removing the rate structure also removes it from any locations using it.

- You can also add, edit, or delete commodities from the Rate Structures screen.
  a. Click the Edit Commodities icon.



b. You will see the screen shown below. The existing commodities are listed in the box on the left. To add a commodity, click the Add New Commodity icon; to edit a commodity, click on the commodity in the list and click the Edit Selected Commodity icon. In both cases you will see the same Edit Commodity screen that was explained earlier in this section (beginning on page 4-8).

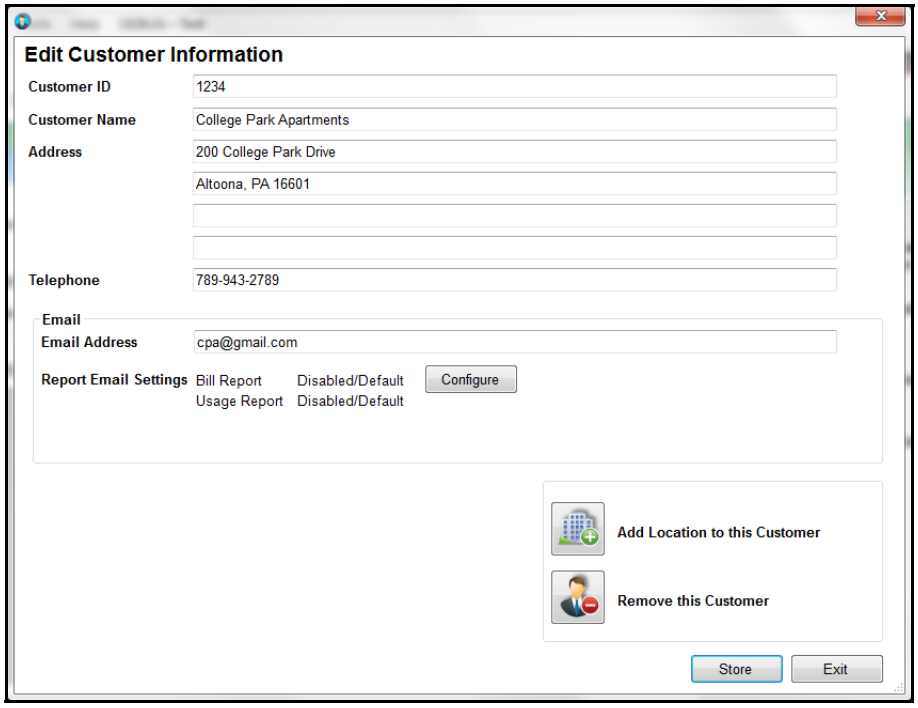


c. To delete the commodity, click on the commodity in the list and click the Remove Selected Commodity icon. You will see a confirmation window - click Yes to delete the commodity; click No to keep the commodity. Removing a commodity will remove all of the rate structures that use the commodity.

4.3: Set Up a Customer

Next you set up customer information. The customer is the person who will be receiving the bill from the provider. The customer can have one location or multiple locations. The software will generate a bill for each location for this customer.

1. From the EnergyReporter Settings Editor main screen, click the Add Customer icon. You will see the screen shown below, but there will be an Apply icon in place of the other icons.



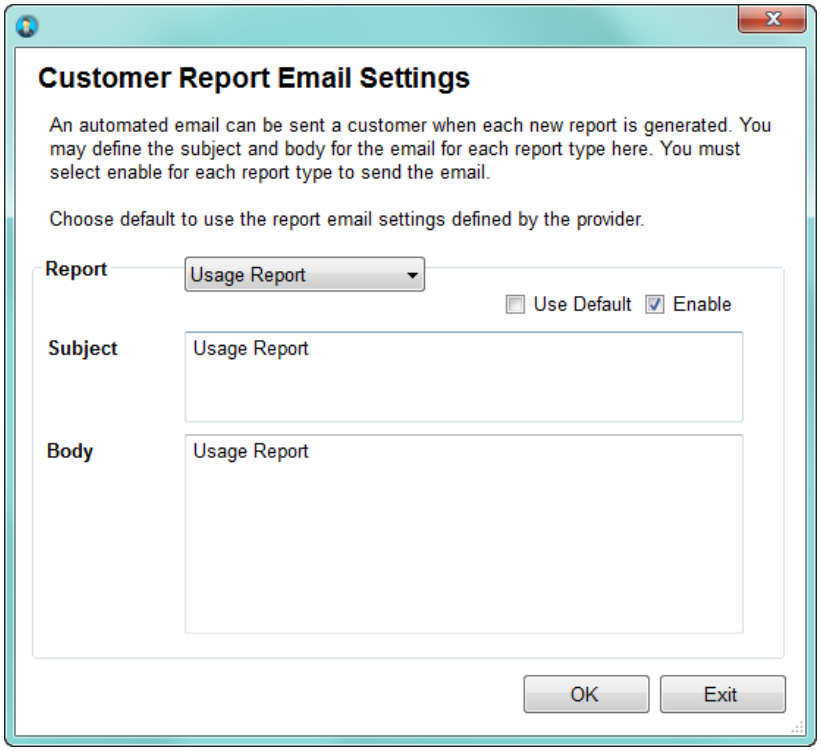
2. Enter the following:

- Customer ID: enter a unique identifier for the customer, which will be used to identify this customer.
- Customer Name: enter the customer's name (this does not have to be unique).
- Address: enter the customer's billing address.
- Telephone number
- Email Address
- Report Email Settings: after you click Apply you will be able to set up this field.

3. Click the Apply icon to save your changes. The message “Values Saved” displays in the bottom left of the screen, and two new icons appear on the screen - Add Location to This Customer and Remove This Customer (shown on the previous screen).

   NOTE: If you want to delete the customer, click the Remove This Customer icon. You will see a confirmation window - click Yes to delete the customer; click No to keep the customer. Removing the customer will delete all locations and meters for the customer.

4. After clicking Apply, you will also see a Configure button next to Report Email settings. Click the button to display the Report Email Settings screen.


Customer Report Email Settings
An automated email can be sent a customer when each new report is generated. You may define the subject and body for the email for each report type here. You must select enable for each report type to send the email.
Choose default to use the report email settings defined by the provider.
Report
Usage Report
Use Default
Enable
Subject
Usage Report
Body
Usage Report
OK
Exit

- When this screen first opens, the Use default box is checked and the Subject and Body fields aren’t editable. Keep that setting as is, if you want to use the report email settings you already set up in the Default Report Email Settings screen (see page 4-6) for this customer.

- If you want to change the Subject and Body fields for this customer’s usage report and/or bill report:

  a. Click the Default button to disable the default setting.

  b. Select Bill Report or Usage Report from the Report pull-down menu.

c. Enter the Subject and Body text you want to use.

d. Click the Enable checkbox.

e. Repeat these steps if desired, for the other Report option.

f. Click OK to close the screen.

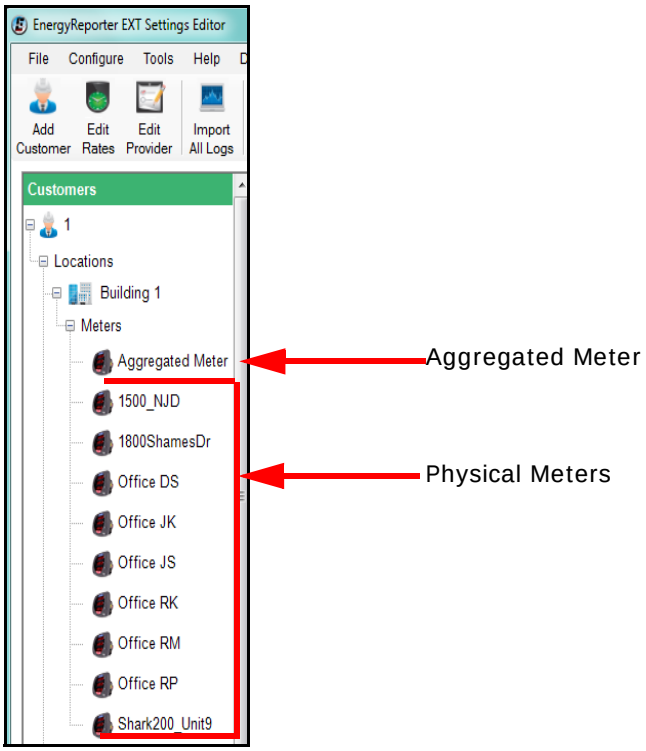
5. Click Add Location to This customer and continue to the next section.

4.4: Set Up a Location and Add Meters to It

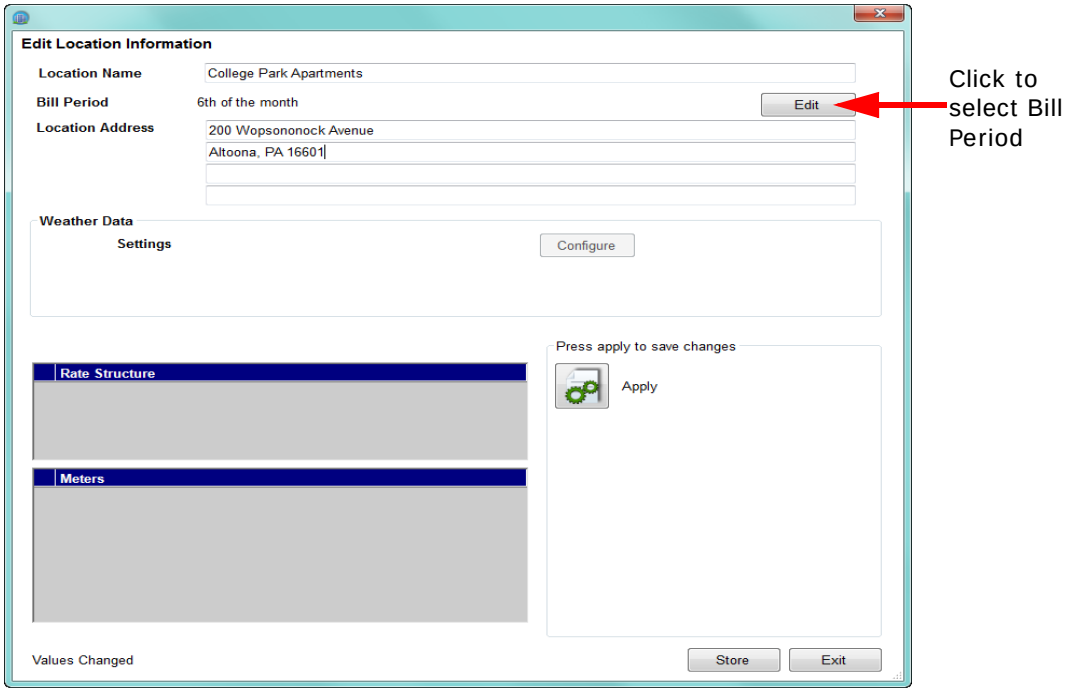
Once you have set up a customer, you enter the customer's billing locations. A location is the physical address - the actual location that is consuming the power or other commodity.

- Customers can have multiple locations. They can also have a rate structure for each commodity being billed for at a location, e.g., Energy and gas.

- Each location can have one or more meters attached to it. If there is more than one meter, the software creates a virtual, "aggregated" meter that stores the composite usage data of all the location's meters. Whenever a meter data import is performed, the Aggregated Meter is updated with new usage data for all the meters at that location. The Aggregated Meter is displayed on the main screen of the Bill Settings Editor, in the Location tree.

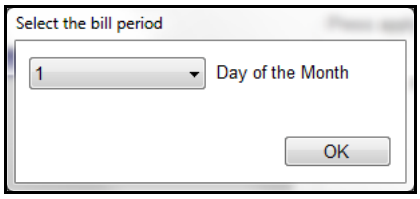


1. When you click the Add Location to This Customer icon, you see the screen shown below. Use this screen to set up information for the billing location.



2. Enter a unique name for the location in the Location Name field.

3. Click Edit next to Bill Period to select a billing period. The billing period is the day of the month on which the bill is computed.



4. From the pull-down menu, select the day of the month you want the billing period to begin and then click OK. The Bill Period screen closes and the day you chose is displayed in the Edit Location Information screen.

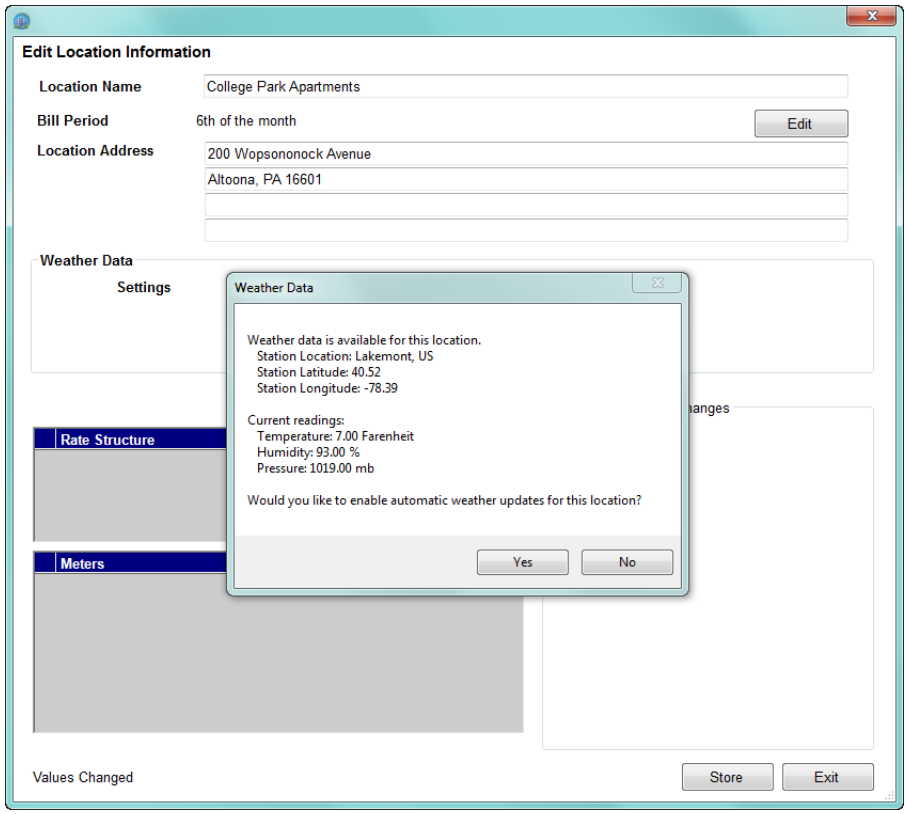
5. Add the Location address.

6. Click Apply to create the location.
   A window opens with weather data information based on the address you entered for the location, and asking if you want to enable automatic weather data updates. The EnergyReporter EXT application can get weather data for your locations; that

you can then use to compare commodity usage against temperature, humidity, and barometric pressure.

Weather data is collected from an online weather data service provider. The service uses the latitude and longitude of your location to find the closest weather station. The latitude and longitude for this location's address is displayed in the window.

Verify that the discovered weather location is correct, and then click Yes to enable automatic weather data updates; click No if you don't want to automatically update, or if you want to configure weather data collection manually (instructions on page 4-41).

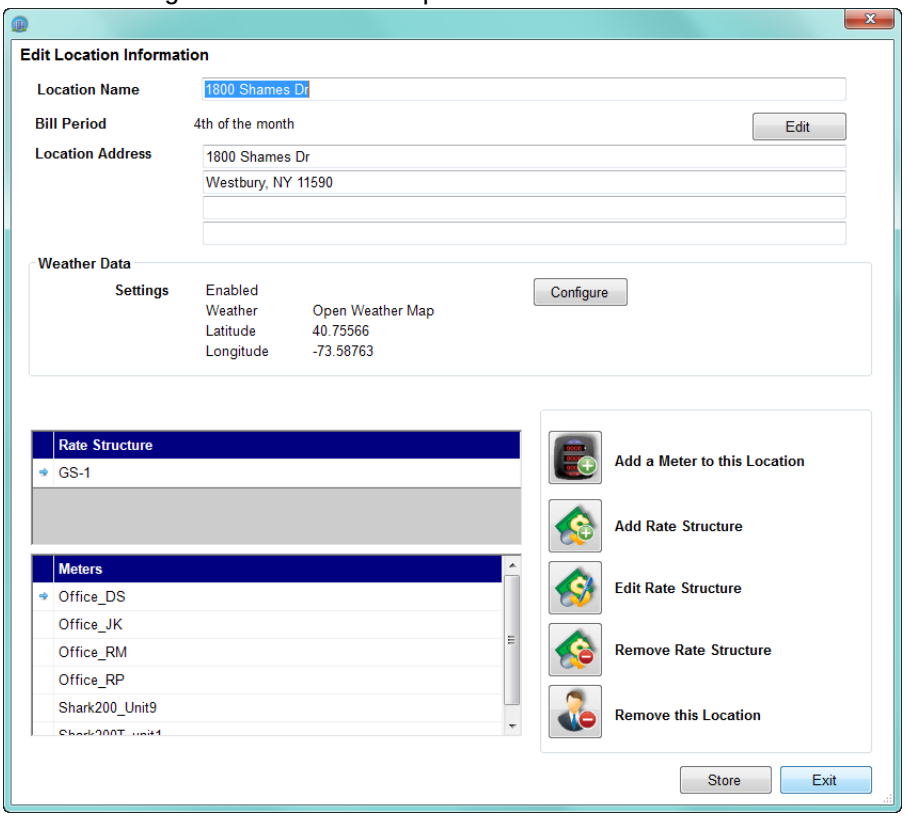


NOTES:

- The default for weather display is Fahrenheit. You can change it to Celsius through the Options screen's Configuration tab. See Section 7.4.2 for instructions.
- You can disable the automatic configuration of weather data through the Option screen's Configuration tab. See Section 7.4.2.

- Weather data consists of temperature, humidity and barometric pressure. Usually, the weather station updates this information not more than once an hour; but it may choose to limit the number of requests that can be fulfilled per hour.

7. The screen changes to offer more options.



The new options let you:

- Configure weather data collection manually
- Add a meter to this location
- Add a rate structure to this location
- Edit a rate structure for this location
- Remove a rate structure from this location
- Remove this location

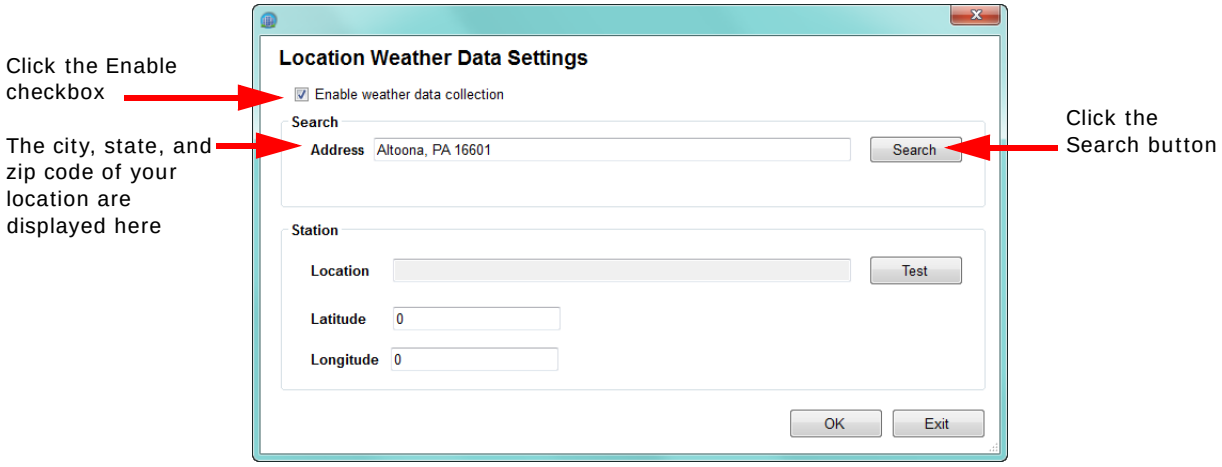
In addition, there are two boxes on the screen - one for Rate Structures assigned to this location, and one for meters assigned to this location. When you are adding a

new location, these boxes will be empty, but if you are editing an existing location, there will be entries in the boxes.

Enable Weather Data Collection Manually

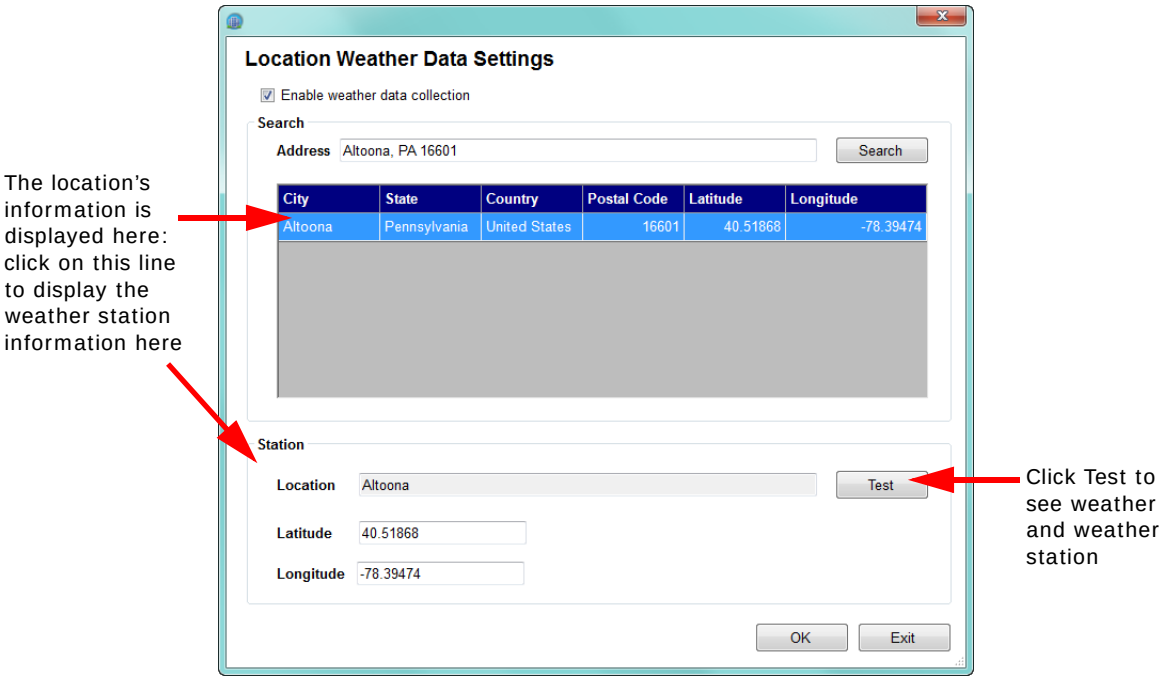
If you want to manually enter or edit weather data collection settings for a location:

a. Click the Configure button in the Weather Data section of the screen.



b. Make sure the Enable Weather Data Collection checkbox is checked. The city, state, and zip code of your location are displayed in the Address bar. If more than one location is displayed, choose the one that matches your customer's actual location.

c. Click Search to find the latitude and longitude of the location.



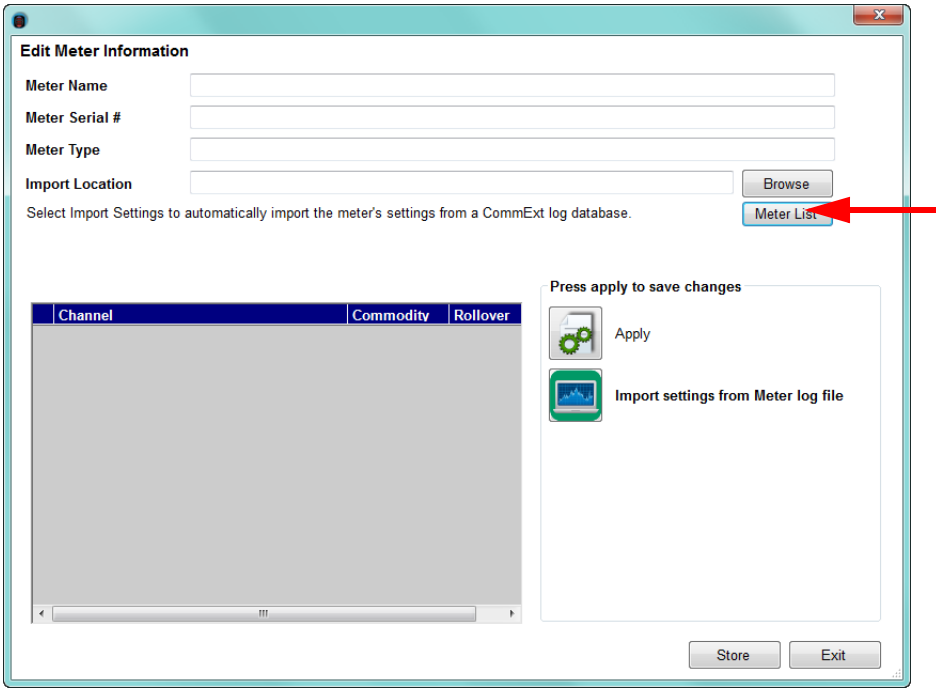
d. Click on the line with the location information. The weather station information is displayed in the section under Station. If more than one location is displayed, choose the one that matches your customer's actual location.

e. Click Test to confirm that the selection is correct. A screen opens with weather station information and weather readings.

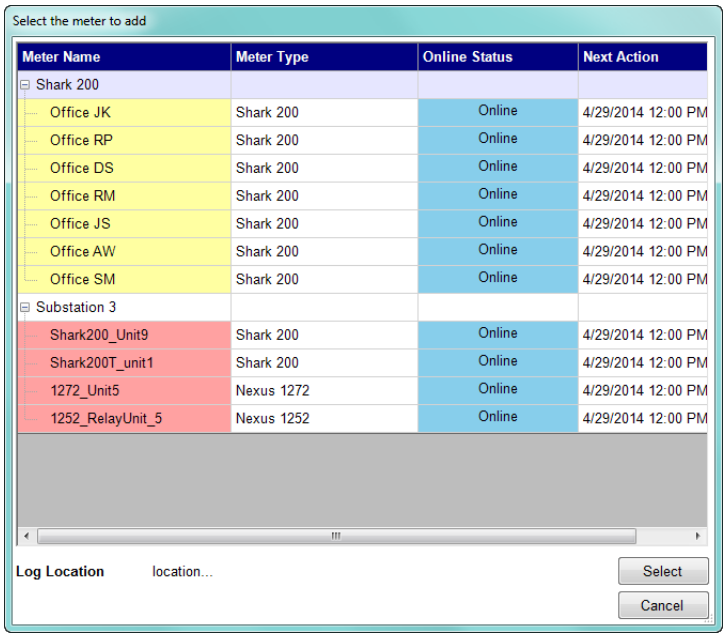
f. Click OK to close the window and save the settings.

Add a Meter

8. Click the Add a Meter to this Location icon.



9. Click the Meter List button to display the meters that have been added through the MeterManager EXT application (explained in Chapter 2).

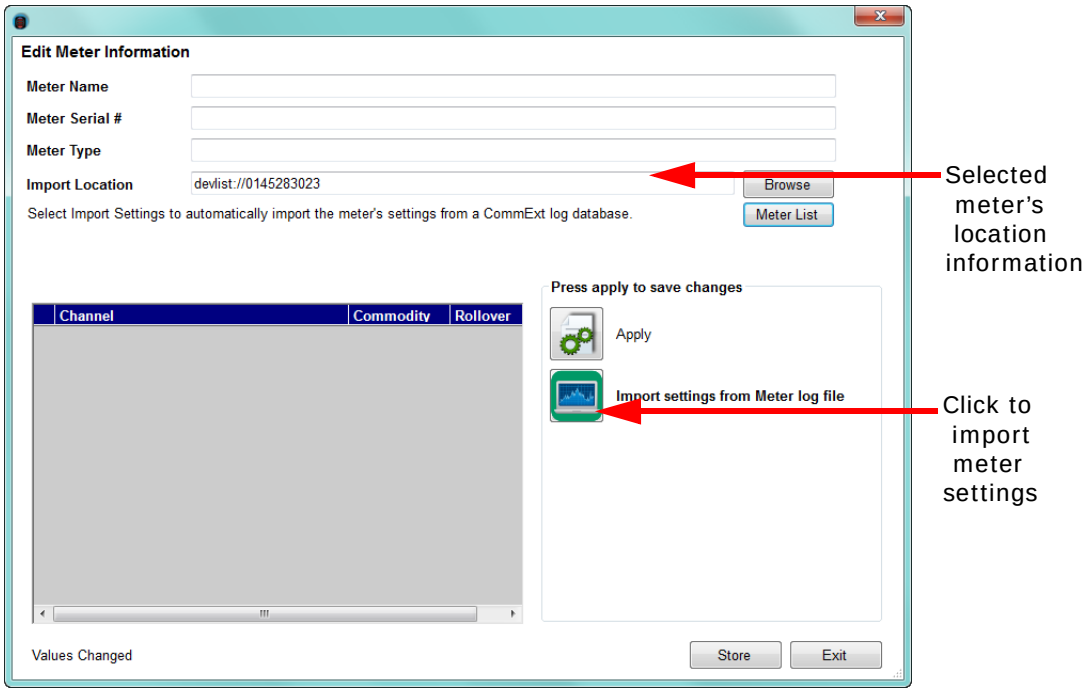


The Meter List lets you quickly and easily add meters and all of their associated

data into the EnergyReporter EXT application.

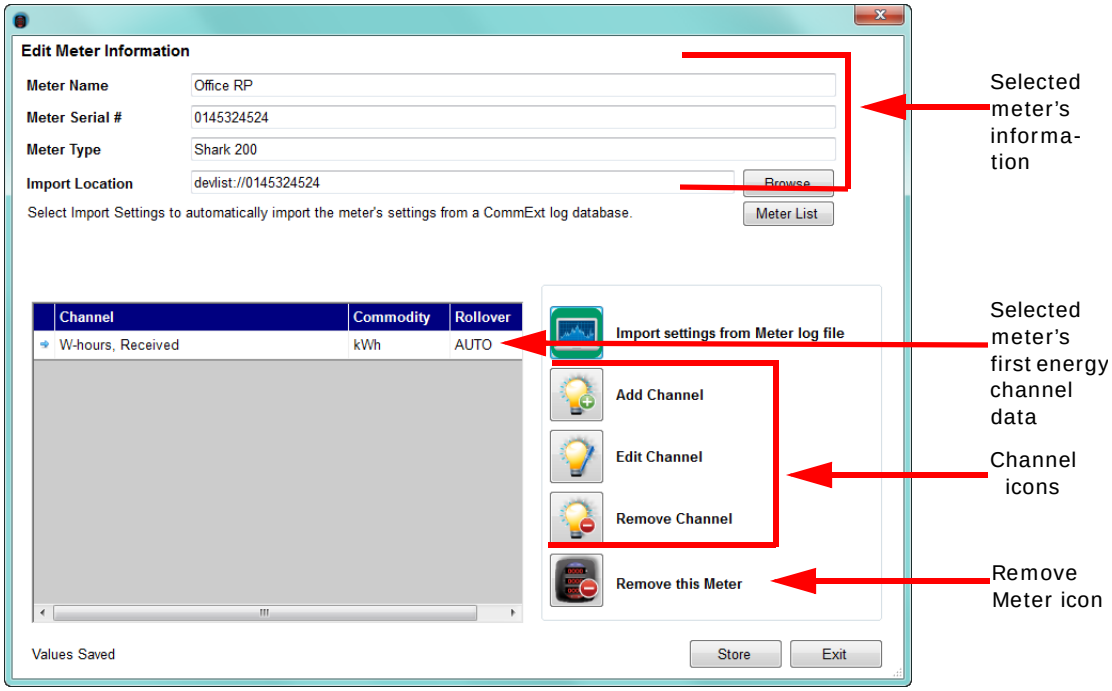
NOTE: You can add a meter manually if you need to, though the preferred method is through the meter list, as described here. For instructions on manually adding a meter, see Section 4.4.1.

10. The meters are listed in their assigned groups. Click on a meter and click the Select button to add it. The Edit Meter Information screen is re-displayed, with the selected meter's Import Location.



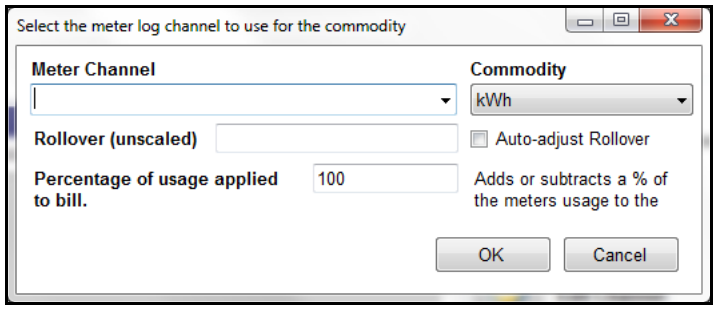
11. Click the Import Settings from Meter Log File icon. You will see a window telling you that the settings have been imported. Click OK to close the window.

12. Click the Apply icon. The screen will re-display showing the selected meter's information and additional icons.



13. After the meter settings are imported from the meter's log file and you click Apply, the first energy channel is selected and displayed in the Channel fields. A channel is a single type of data item from the meter's log database, e.g., Watt-hours Received. The channel will be linked to a commodity for use in generating bills; e.g., the Watt-hours Received channel linked to the kWh commodity. The Channel icons let you add channels, edit them, or remove them.

    To add a channel, Click Add Channel.



14. Select the channel from the pull-down menu. The channels you see are the data values that you set up for this log using the Communicator EXT™ 4.0 application.

They are channels for Energy and/or pulse accumulations. See Section 4.4.3 for channel setting instructions for external databases, such as an HMI EXT™ application database.

15. Select the commodity from the pull-down menu. Once the data has been imported, it will be tracked by the commodity.

    - You can select only one channel per commodity, per meter, e.g., Total Watt-hours for kWh.
    - A meter can have multiple commodities. See the diagram below.

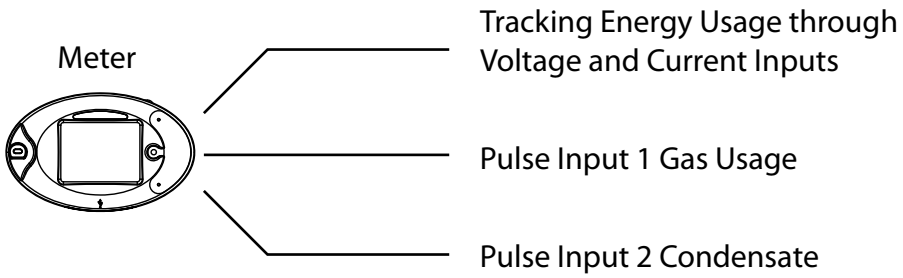


Figure 4.3: Example of Meter Measuring Multiple Commodities

16. Auto-adjust Rollover is the default selection on the screen. The unscaled rollover field will display the settings from the Communicator EXT™ 4.0 software for this channel, if you click on the Auto-adjust Rollover box to de-select it. You can edit the value in the unscaled rollover field.
    NOTE: Manually setting the rollover field is only applicable to older Nexus® 1250 models or HMI EXT™ application values.

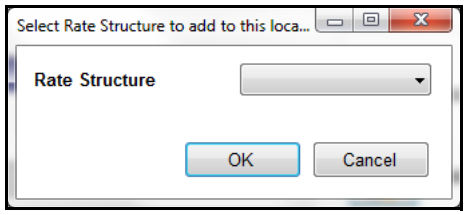
17. The Percentage of Usage Applied to Bill field lets you add or subtract a portion of the usage for this channel, for this meter, to the bill when it is generated, allowing for credits for certain meters. You might want to use this if you want to remove a meter from being billed for this usage. For example, if you have a main meter at a location, e.g., a meter attached to the building's utility feeder, and submeters in individual tenant units, you may want to bill for main meter usage, comprised of things like hallway and outside lighting, on a separate bill from the tenant billing. To do this you would put 100% for the usage field for the submeters and -100% for the usage field for the meter attached to the utility feeder.

18. When you have made your choices, click OK. The channel, commodity, and roll-over value are now shown in the Channel/Commodity/Rollover box in the Edit Meter Information screen.
    NOTE: To edit a channel, click on it in the box and click the Edit Channel icon; to remove a Channel, click on it in the box and click the Remove Channel icon.

19. If you want to add a channel for another commodity, follow the same procedure. When you are done selecting channels, click Store to save the settings.

NOTE: This screen also gives you the option of removing the meter; to do so, click the Remove This Meter icon. **Removing the meter will delete all of the imported data for the meter.**

20. Click Exit to return to the Edit Location Information screen. Add a rate structure to the Location by clicking the Add Rate Structure icon. You will see the screen shown below.



21. Select the rate structure you want from the pull-down menu and click OK to close the screen.
    NOTE: You can also select Create New to add a new rate structure. Follow the instructions for adding a rate structure in Section 4.2.

4.4.1: Adding a Meter Manually

The usual and preferred method of adding meters to a location is through the meter list, as shown in the previous section. If you need to enter a meter manually, follow these instructions:

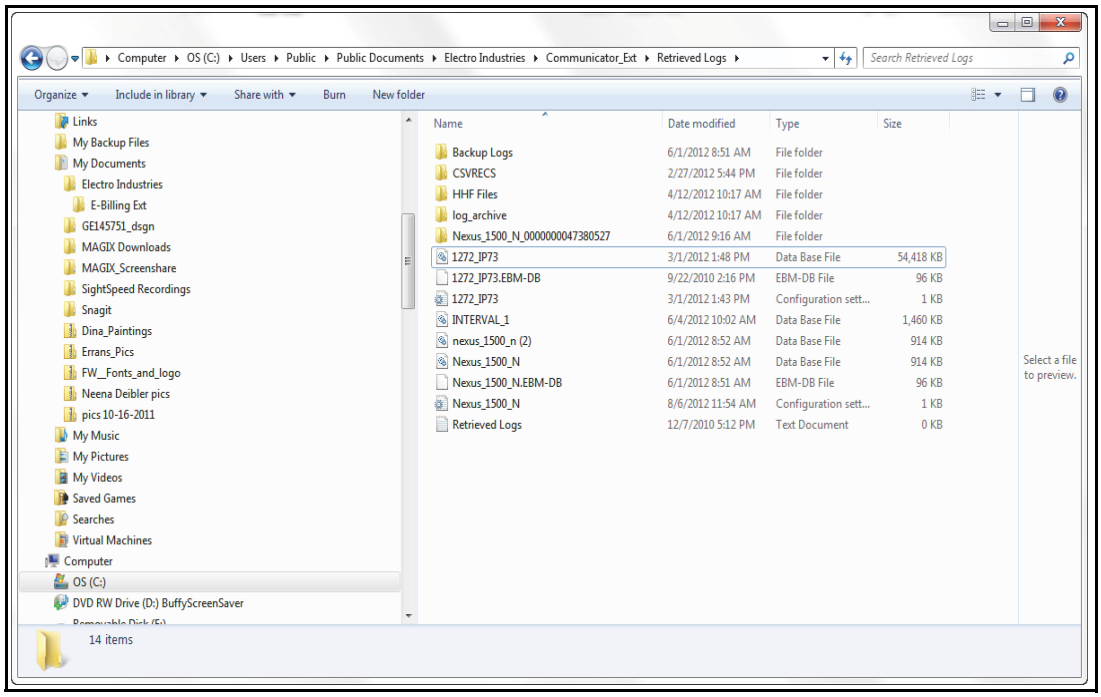
1. From the Edit Location Information screen, click the Add a Meter to This Location icon. The Edit Information screen opens. Enter the following:

   - Meter Name: enter a unique identifier for the meter. This name must be unique across all locations. It is used to identify the meter's billing data.

- Meter Serial #: enter the meter's serial number.

- Meter Type: enter the meter type (Nexus® or Shark®).

2. Import Location is the place where the meter's billing log data is stored (e.g., C:\Users\Public\Documents\Electro Industries\Communicator_EXT\Retrieved Logs). This log data file contains the raw values the EnergyReporter EXT application imports in order to generate its billing database, i.e., Energy usage or pulse accumulations. Refer to Figure 4.1 for a depiction of the data flow between applications; see Chapter 2 if you need to refresh your understanding of setting up the meters' historical logs for EnergyReporter EXT application use.
   Click Browse to locate the meter's log database file.You will see a screen that lets you locate and select the log file. See the example screen shown below.



NOTES:

- The log database file comes from either the Communicator EXT™ 4.0 application (*.db or *.dml: the database created when logs are retrieved using the Communicator EXT™ 4.0 application) or the HMI EXT™ application (*.dbf: the billing data database created by the HMI EXT™ software; see that software's documentation for details).

- See Section 6.1 for file importing suggestions.

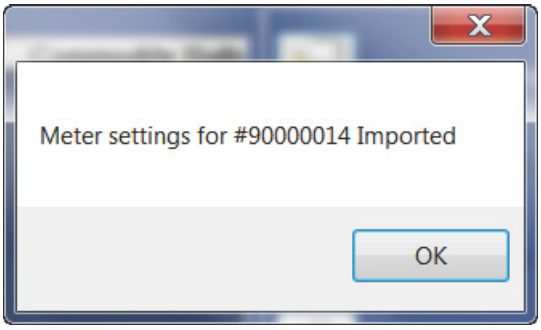
WARNINGS!

- Be careful when selecting the location to import from. Importing is done by the EnergyReporter Settings Editor software, and if you select a location that is not accessible (or invalid), you may not be able to import the data.
- If you change the import location file, it will wipe out the selected channels. You will have to select the channels you want to import, again.

3. When you find the file you want to use, click Open. The screen closes and you see the Edit Meter Information screen. The log file's path is now displayed on the screen next to Import Location.

4. Once you've selected the file to import from, the application will verify that it contains log items that can be linked to commodities. This includes Energy, e.g., Total Watt-hours, and pulse accumulations, e.g., a Digital Input channel.

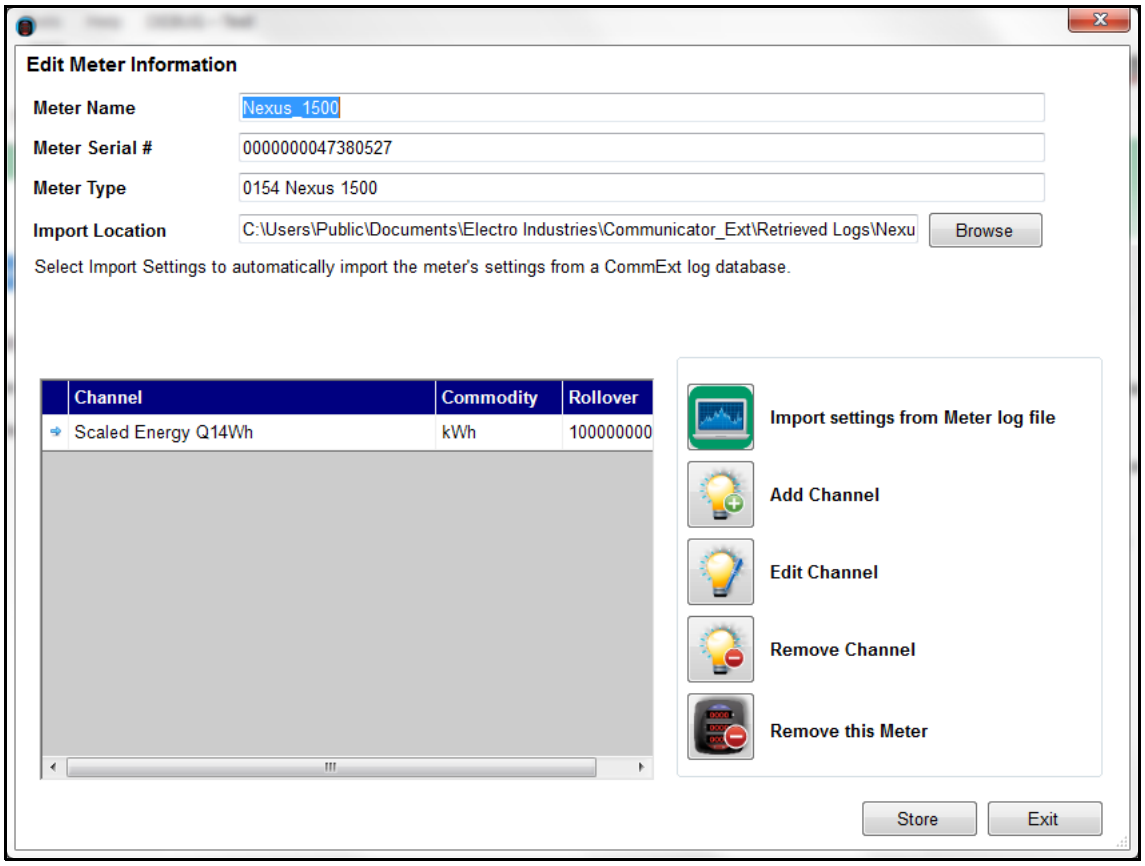
5. If you are using a Communicator EXT™ 4.0 log database, click the Import Settings from Meter Log File icon (this function is not applicable to HMI EXT™ databases). You will see the message window shown below. It tells you that the meter settings were imported from the meter with the serial number listed in the screen. Click OK to close the window.



NOTE: The Import Settings function will only fill in a meter name that has not already been entered. If you have already filled in the meter name, it will leave that as is.

TIP: EIG highly recommends importing all the meter configuration data. This automated tool makes the meter configuration task much simpler.

6. Click the Apply icon to create the meter. The Edit Meter information screen re-displays with additional options - now you can choose the channels to import. See the example screen shown below.



7. Continue from step 13 in Section 4.4.

4.4.2: Meter at Location Example

If you have two meters at a location, for example, each metering a utility feeder, you would set up both meters for the location, following the instructions in this section. When you import data, the software will import all of the usage data for both meters and when the bill is generated the usage for both meters will be totalized to arrive at the billed dollar amount. See the diagram on the next page.

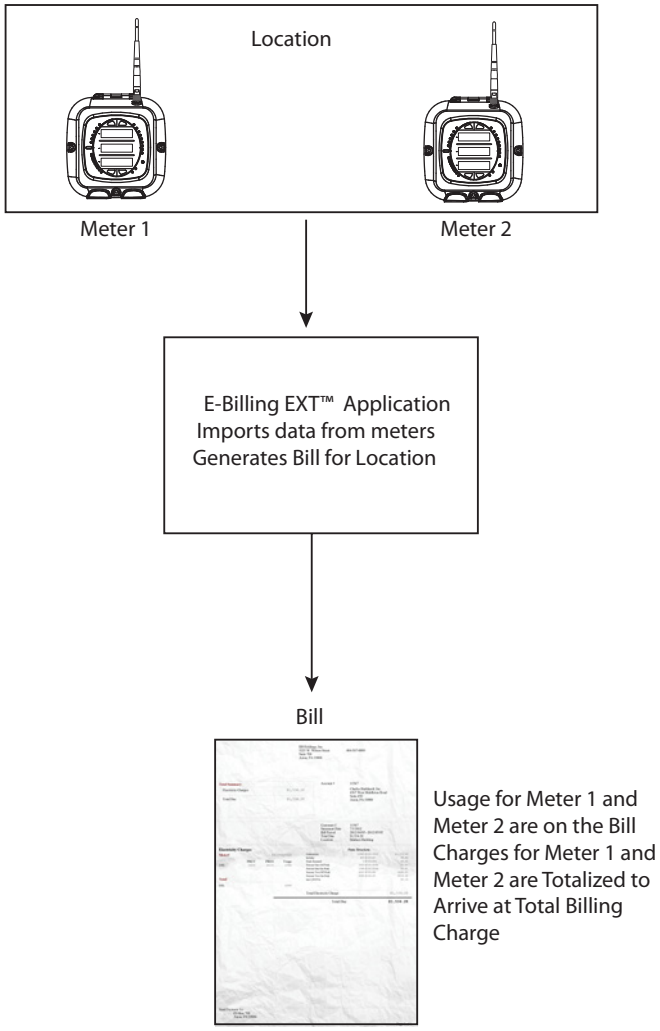

Location
Meter 1
Meter 2
E-Billing EXT™ Application
Imports data from meters
Generates Bill for Location
Bill
Usage for Meter 1 and Meter 2 are on the Bill
Charges for Meter 1 and Meter 2 are Totalized to Arrive at Total Billing Charge

Figure 4.4: Totalizing Meters

4.4.3: Importing External Data

If you are setting up the EnergyReporter EXT application for use with external data (as opposed to the Communicator EXT™ 4.0 application log data), such as an HMI EXT™ application database file, there are some unique considerations. Below is an example of an HMI EXT™ application database file formatted for use with the EnergyReporter EXT application.

	A	B	C	D
1	DATE	TIME	KWHR	CONDENSATE
2	1/1/2012	0:00 AM	433.6	25538607
3	1/1/2012	0:15 AM	438.0	25538607
4	1/1/2012	0:30 AM	442.5	25538606
5	1/1/2012	0:45 AM	446.9	25538606
6	1/1/2012	1:00 AM	451.4	25538605
7	1/1/2012	1:15 AM	455.8	25538605

- The database file must have four fields:
    - DATE: the date of the record formatted as yyyy/mm/dd
    - TIME: the time of day of the record formatted as hh:mm:ss
    - KWHR: the Energy usage in kilo-watt-hours
    - CONDENSATE: this field is a pulse accumulator channel, intended for condensate (steam) pulses. You can assign this channel to other commodities, such as gas or water, in the EnergyReporter EXT application - see Section 4.4 for instructions. This field is assumed to be in kilo scale.

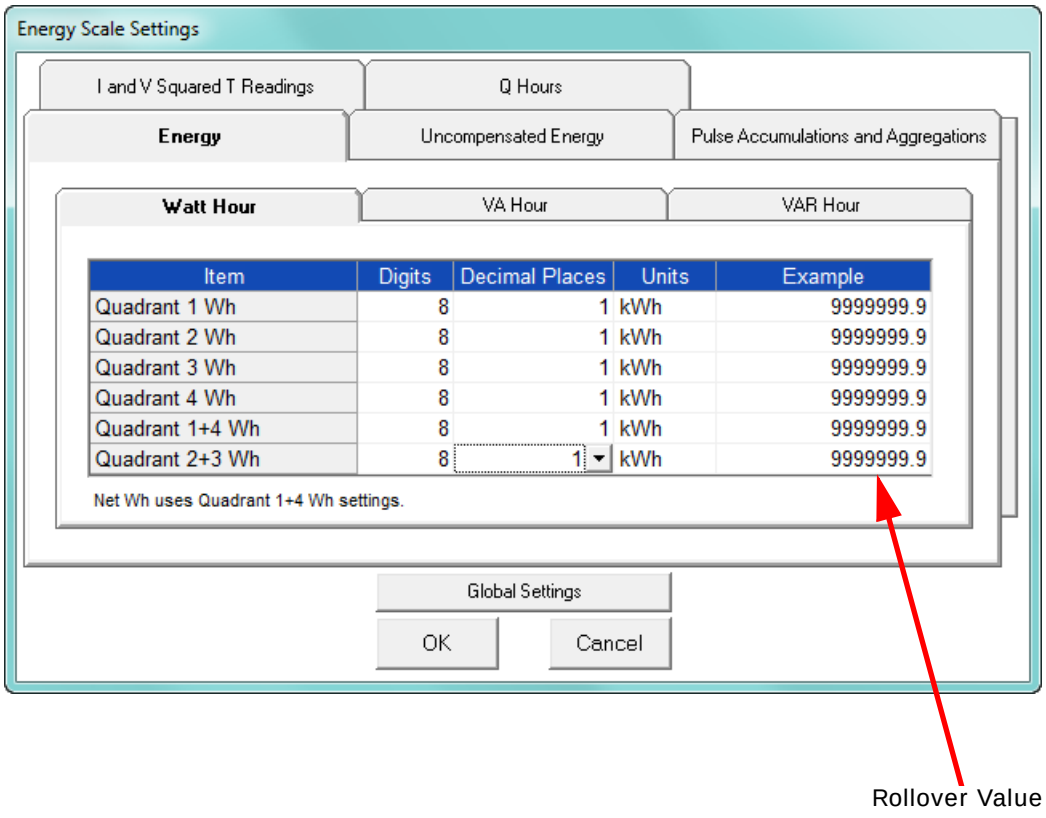
  These are the only fields you can use. If you need to use more fields, split the data into multiple files and import as multiple meters.

- The optimal interval for the data is 15 minutes, time-stamped on the minute.
- The database file must be a dBase IV format database. It can be opened in Excel, but should not be saved in Excel as this can cause database corruption which will prevent the file from working with the EnergyReporter EXT application.
- The file name should be eight characters with an extension of three characters, e.g., Nx1500_2.dbf.

NOTES:

- HMI EXT™ databases separate the original meter from the data, so there is no way for the application to determine the rollover value. Consult the HMI EXT™ configuration and documentation to determine the correct value to enter. Your system integrator will have to provide you with the Energy or other commodity rollover value.

- If no rollover is programmed in the HMI™ EXT application, the EnergyReporter EXT application rollover value should be the same as the rollover value in the meter's device profile, set in the Communicator EXT™ 4.0 application (in the meter's Device Profile>Revenue and Energy Settings>Energy Scaling).



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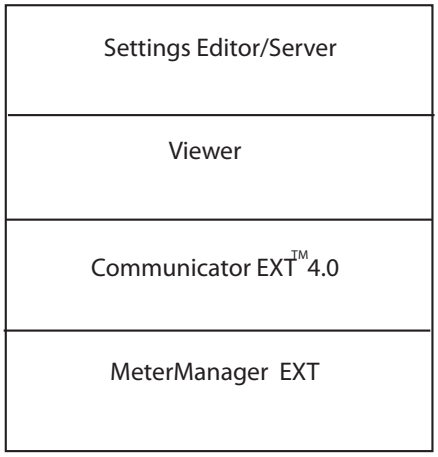
5: Step 5 - EnergyReporter Dashboard Viewer

The EnergyReporter EXT application has two main components. The first is a settings editor/server that provides all of the calculations and stores the data in the usage database. The second is a viewer application. The viewer component allows the user to view and analyze the stored data. Both components can be installed on one machine; however, the editor/server can **only** be installed on **one** machine. The viewer is a client component and can be installed on multiple machines.

Single Computer Mode (One Computer Only, or Remote Desktop Application)



Multi-Computer Mode

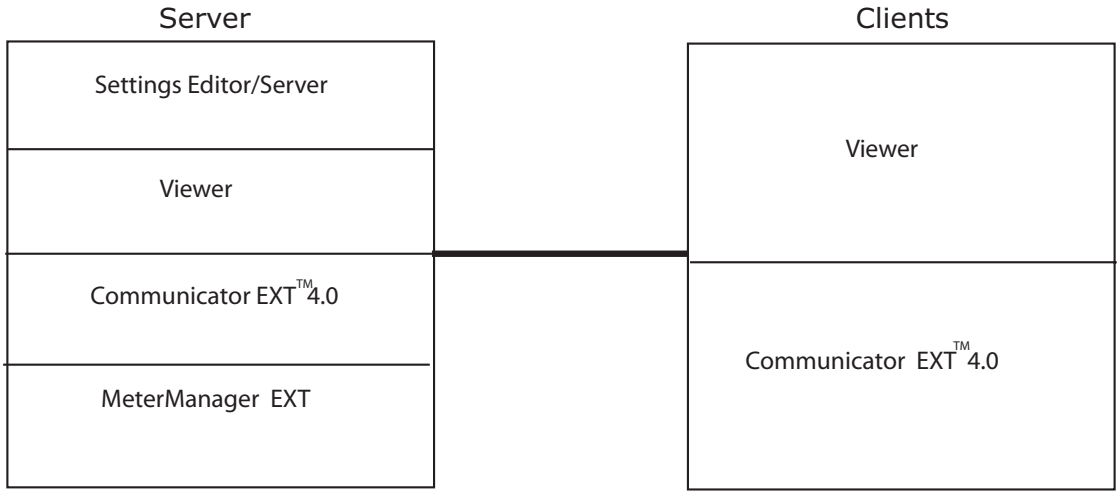


Figure 5.1: Settings Editor/Server and Viewer Installed on One PC

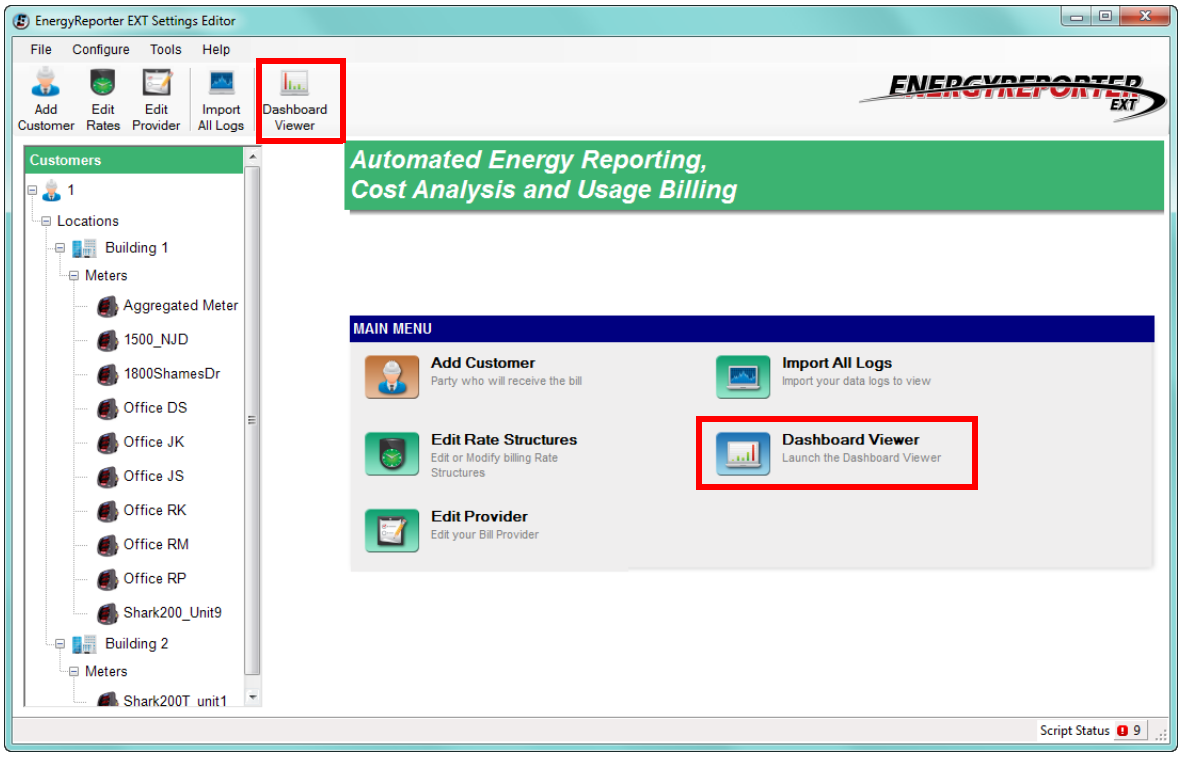
You used the EnergyReporter Settings Editor/Server to set up customers, locations for customers, and meters at locations, as well as commodities and rate structures that will be applied to usage. The MeterManager EXT application automatically downloads the logs from the selected meters and the EnergyReporter EXT application automatically imports the commodity usage data from the logs. The EnergyReporter EXT application generates the bills and usage reports based on the billing period and report criteria you have set up using the EnergyReporter Settings Editor.

The EnergyReporter Dashboard Viewer is the part of the EnergyReporter EXT application that lets you see, print, and export billing and usage information for the customers, locations, and meters.

As mentioned in Chapter 4, locations with multiple meters generate a virtual meter to store aggregated meter data. The Aggregate Meter's data can also be accessed from the EnergyReporter Dashboard Viewer.

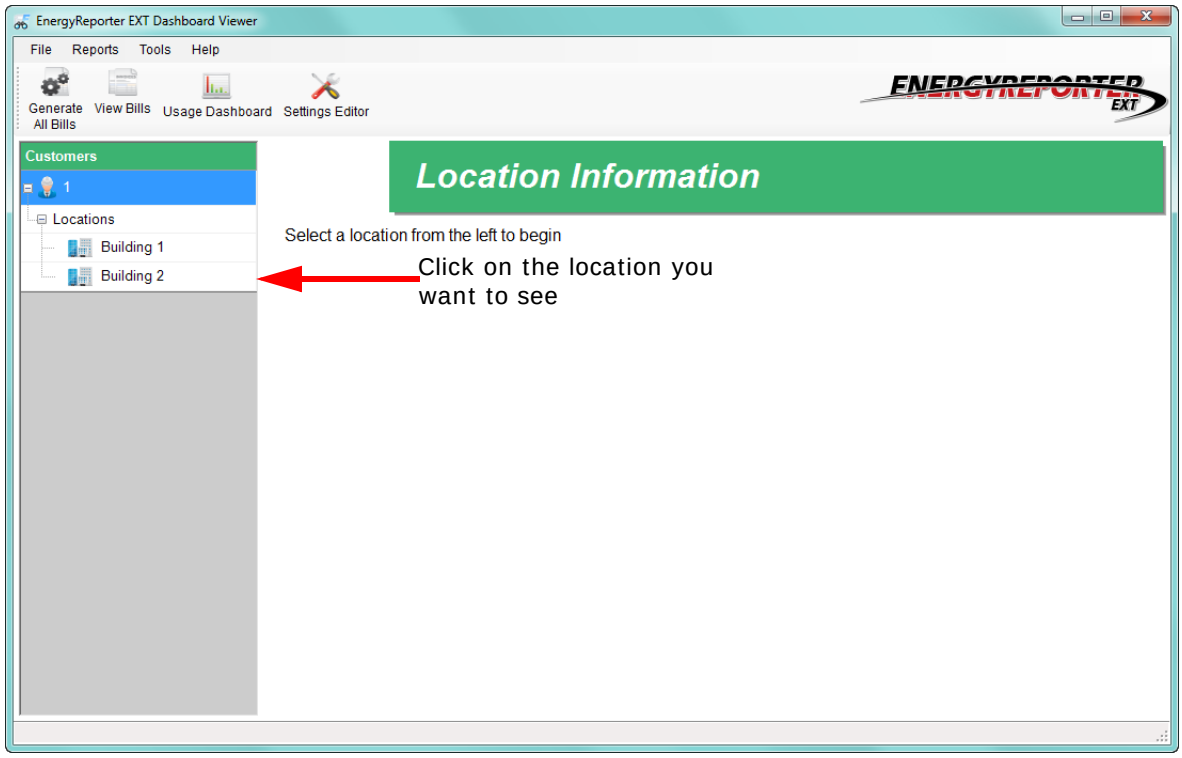
5.1: Accessing the EnergyReporter Dashboard Viewer

1. Click either the Dashboard Viewer icon from the top of the EnergyReporter Settings Editor screen, or the Launch Bill Viewer icon from the EnergyReporter Settings Editor main screen.

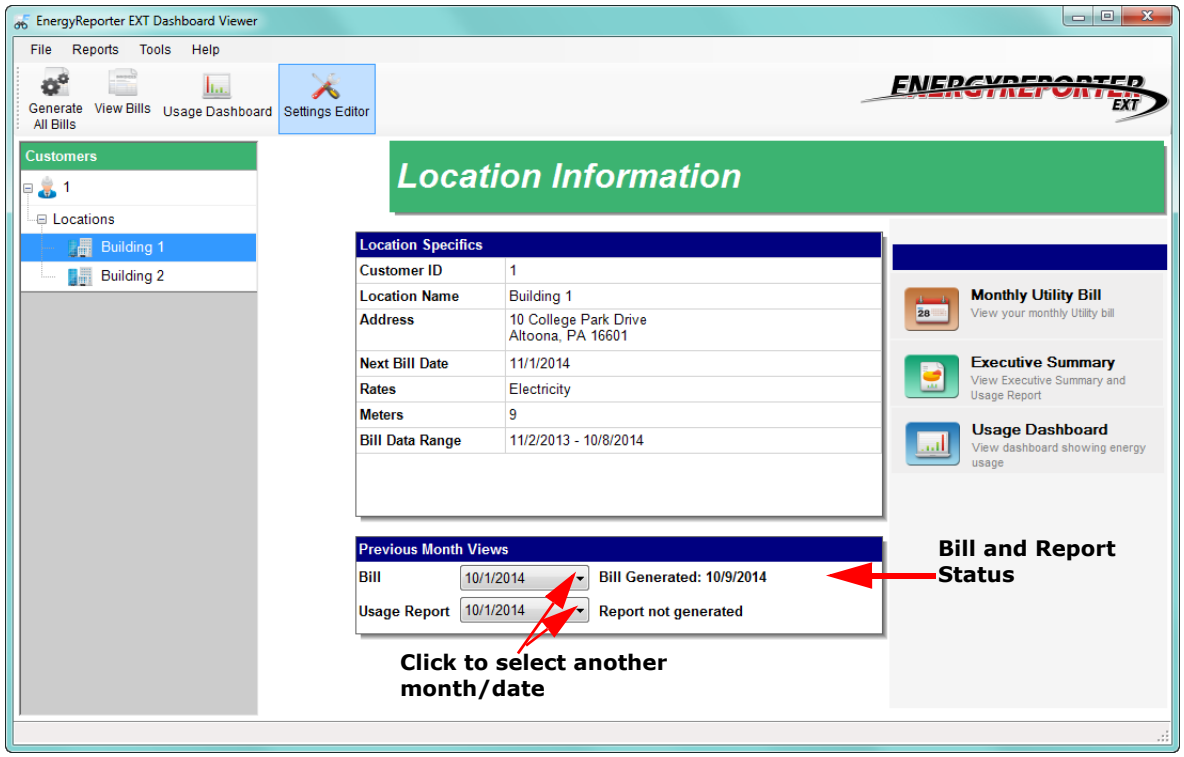


NOTE: You can click Tools>Refresh to return to the main screen display from another screen, e.g., the Location screen.

2. The EnergyReporter Dashboard Viewer application starts and you see the main EnergyReporter Viewer screen. Choose a location from the tree on the left side of the screen.



3. Information about the location is shown on the right side of the screen.



4. You can select a different month/date to see the Bill and Usage Report status for that month.

   The icons on the right of the screen let you:

   - Monthly Utility Bill - view the bill for the month. If it hasn't been generated yet, it will be generated and then displayed. See Section 5.4.
   - Executive Summary - generate the Executive Summary Usage report based on your selections. See Section 5.3.1.
   - Usage Dashboard - display the Usage Dashboard - see Section 5.2.

   The icons at the top of the screen let you:

   - Generate All Bills - generate customer bills. See Section 5.4.
   - View Bills - see already generated bills. See Section 5.4.
   - Usage Dashboard- display the Usage Dashboard - see Section 5.2.

- Settings Editor - open the EnergyReporter Settings Editor application. See Chapter 4.

The menu items at the top of the screen let you:

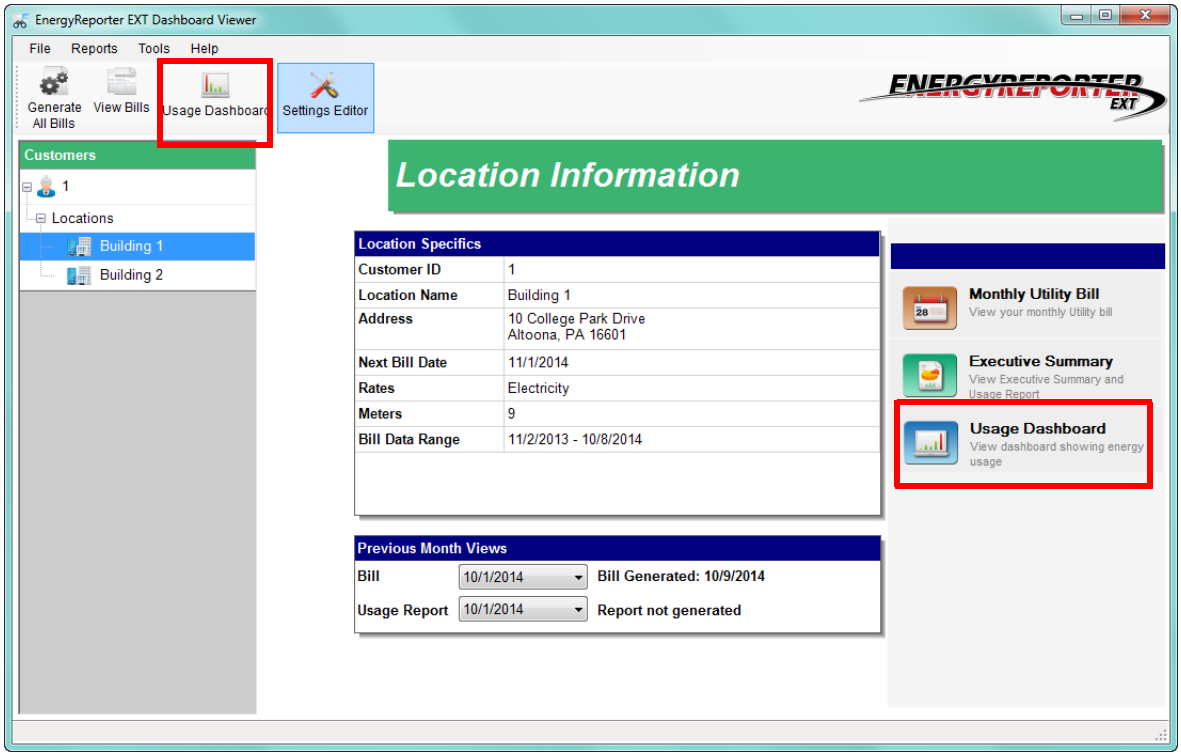
- File - select to connect to the database or exit the EnergyReporter Dashboard Viewer.
- Reports - view or generate bills and usage reports, per selected criteria. See sections 5.3 and 5.4.
- Tools - view bill data, view bill errors for locations, export meter data, perform advanced tasks (see chapters 6 and 7).
- Help - check for updates, see User Manual, see information about the application version, read the User License.

5.2: Usage Dashboard

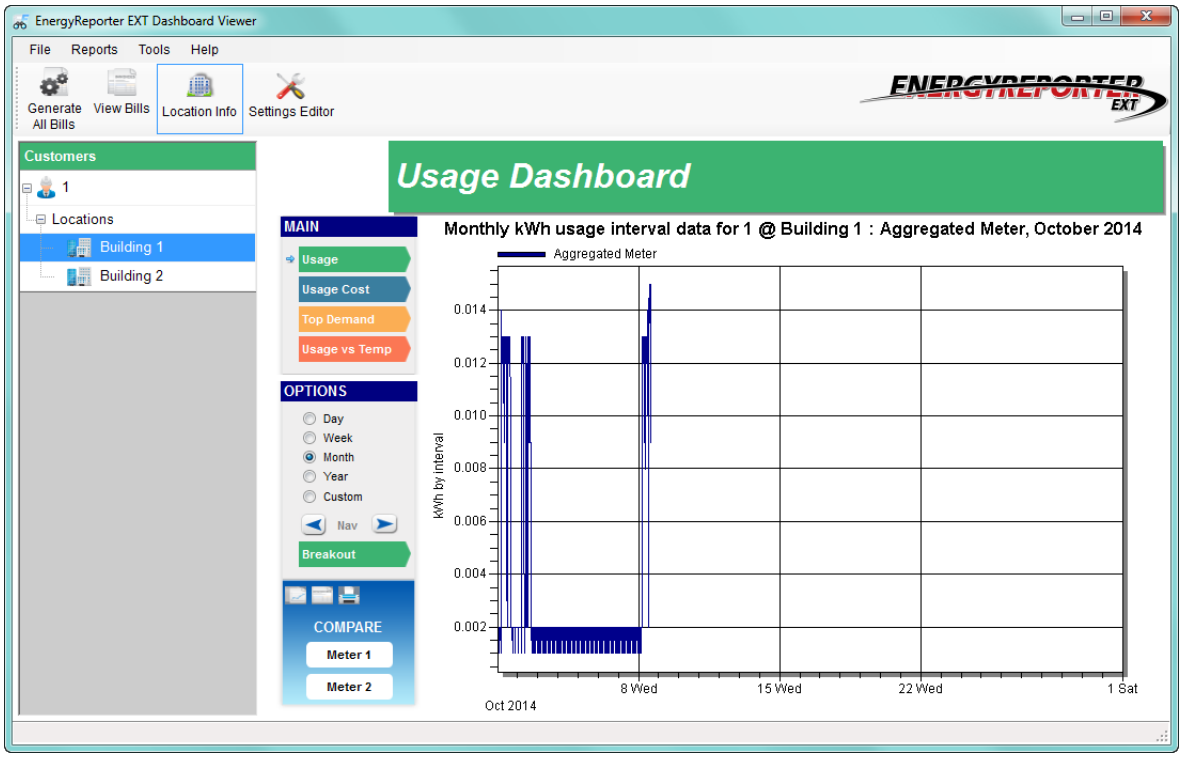
One of the important features of the EnergyReporter EXT application is the Usage Dashboard. It supports an Enterprise-wide billing solution by allowing you to easily view Energy and other commodity usage data in a number of formats:

- View usage by day, week, month, year, or by a customized date range
- Compare usage between meters/locations
- Compare usage against weather data
- View costs
- View top Demand by day, week, month, year, or by a customized date range
- View meter logs (for meters set up using the MeterManager EXT Meter List)
- Connect to the meter through Communicator EXT™ 4.0 software (for meters set up using the MeterManager EXT Meter List)
- Copy, export, or print graph image

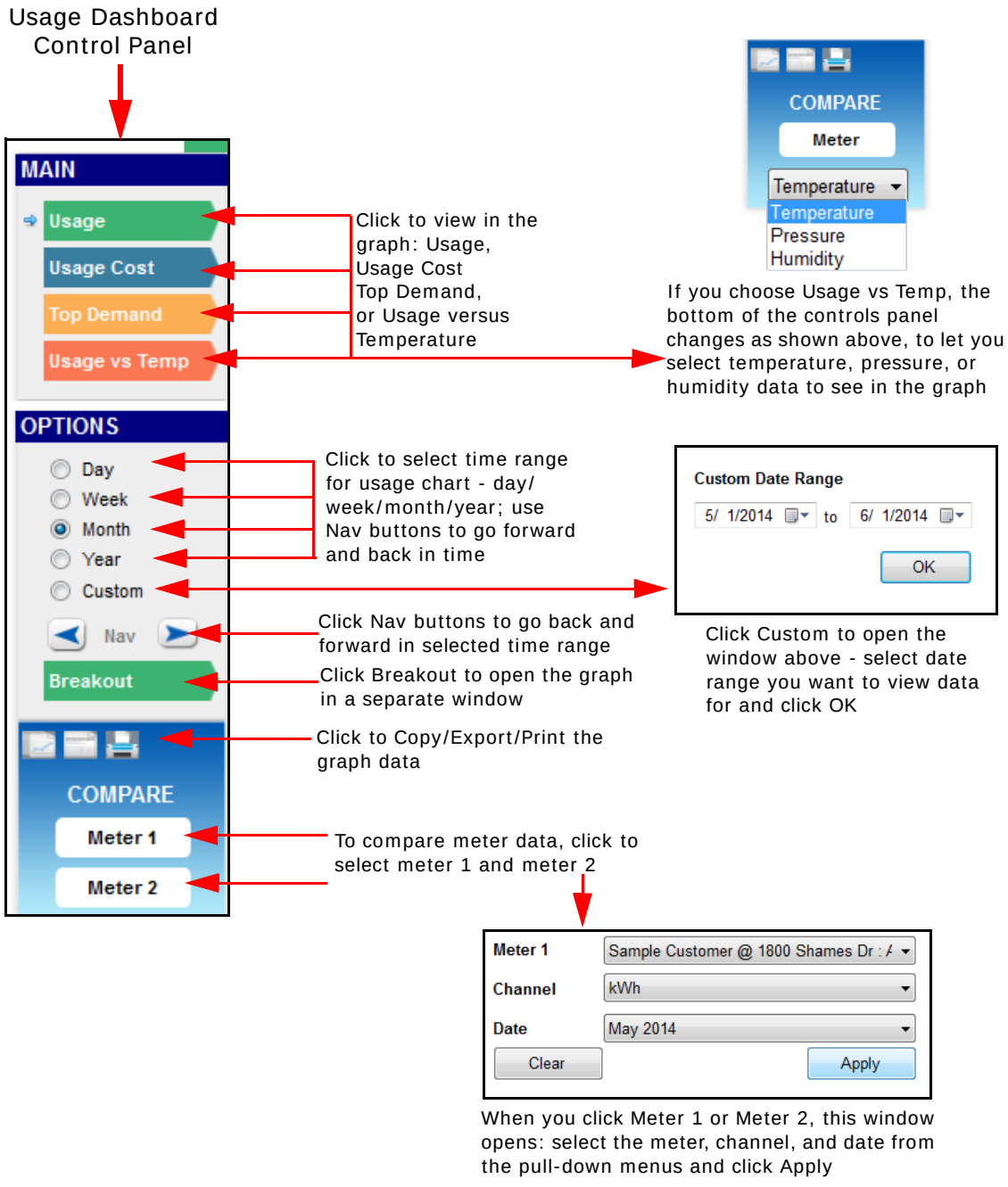
1. To open the Usage Dashboard, click on the Dashboard Viewer icon either at the top or the middle right of the EnergyReporter Dashboard Viewer screen.



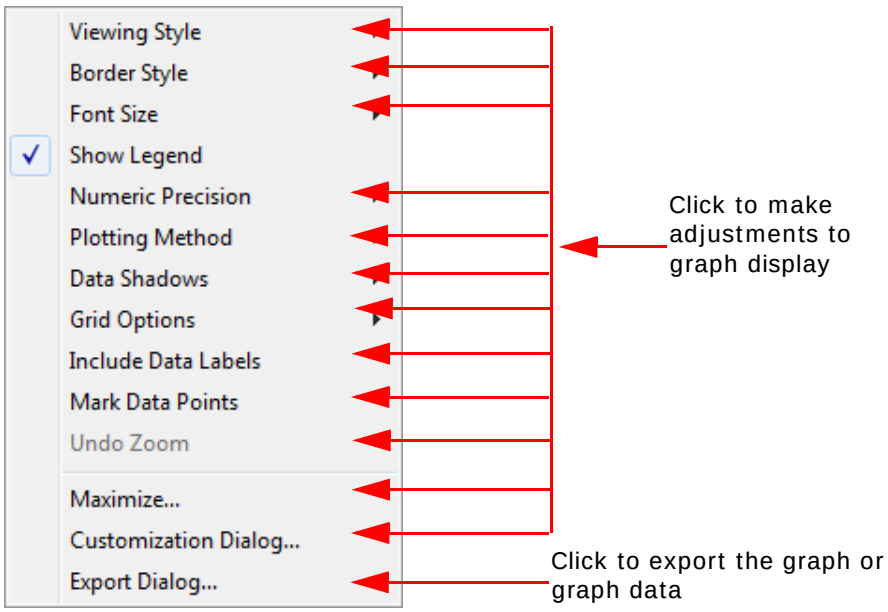
2. The EnergyReporter Dashboard Viewer opens.



The monthly usage is shown for the current month. There are controls to the left of the Usage Dashboard. See the diagram below for an explanation of the controls.

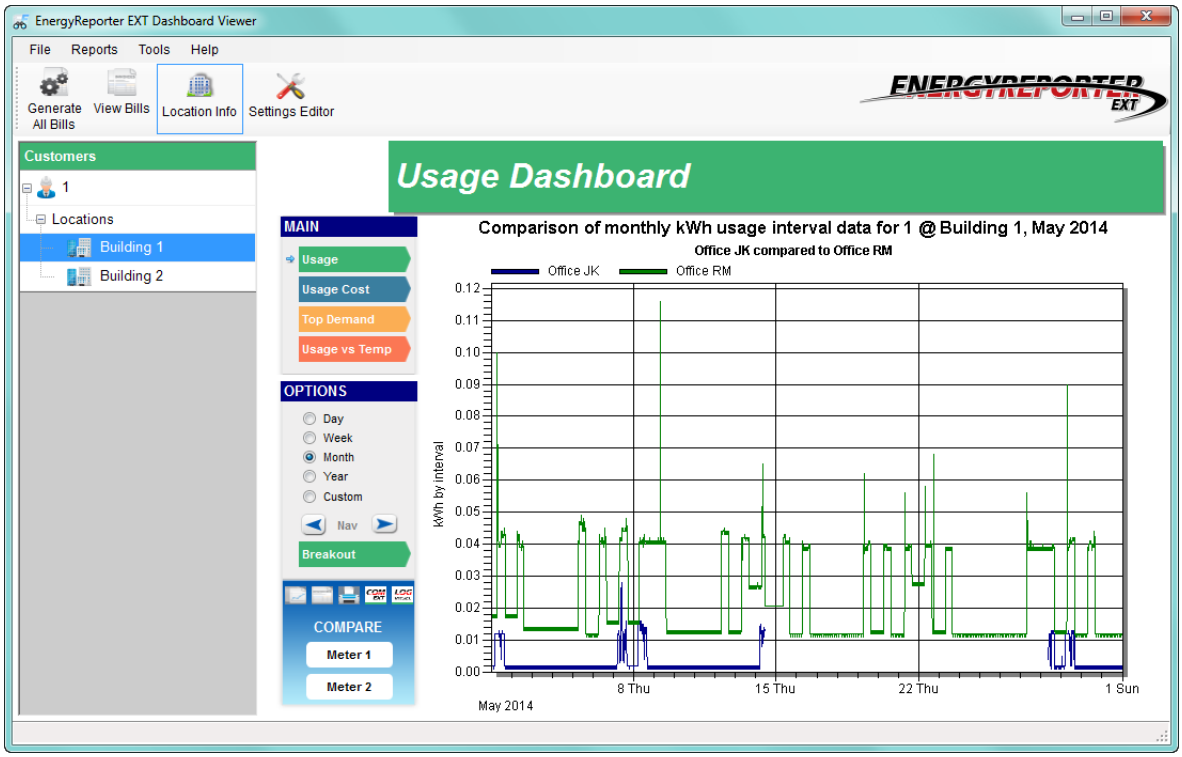

Usage Dashboard Control Panel
MAIN
Usage
Usage Cost
Top Demand
Usage vs Temp
OPTIONS
Day
Week
Month
Year
Custom
Nav
Breakout
COMPARE
Meter 1
Meter 2
Click to view in the graph: Usage, Usage Cost Top Demand, or Usage versus Temperature
COMPARE
Meter
Temperature
Temperature
Pressure
Humidity
If you choose Usage vs Temp, the bottom of the controls panel changes as shown above, to let you select temperature, pressure, or humidity data to see in the graph
Click to select time range for usage chart - day/ week/month/year; use Nav buttons to go forward and back in time
Custom Date Range
5/ 1/2014
to
6/ 1/2014
OK
Click Custom to open the window above - select date range you want to view data for and click OK
Click Nav buttons to go back and forward in selected time range
Click Breakout to open the graph in a separate window
Click to Copy/Export/Print the graph data
To compare meter data, click to select meter 1 and meter 2
Meter 1
Sample Customer @ 1800 Shames Dr
Channel
kWh
Date
May 2014
Clear
Apply
When you click Meter 1 or Meter 2, this window opens: select the meter, channel, and date from the pull-down menus and click Apply

You can also right-click in a graph to open a sub-menu.

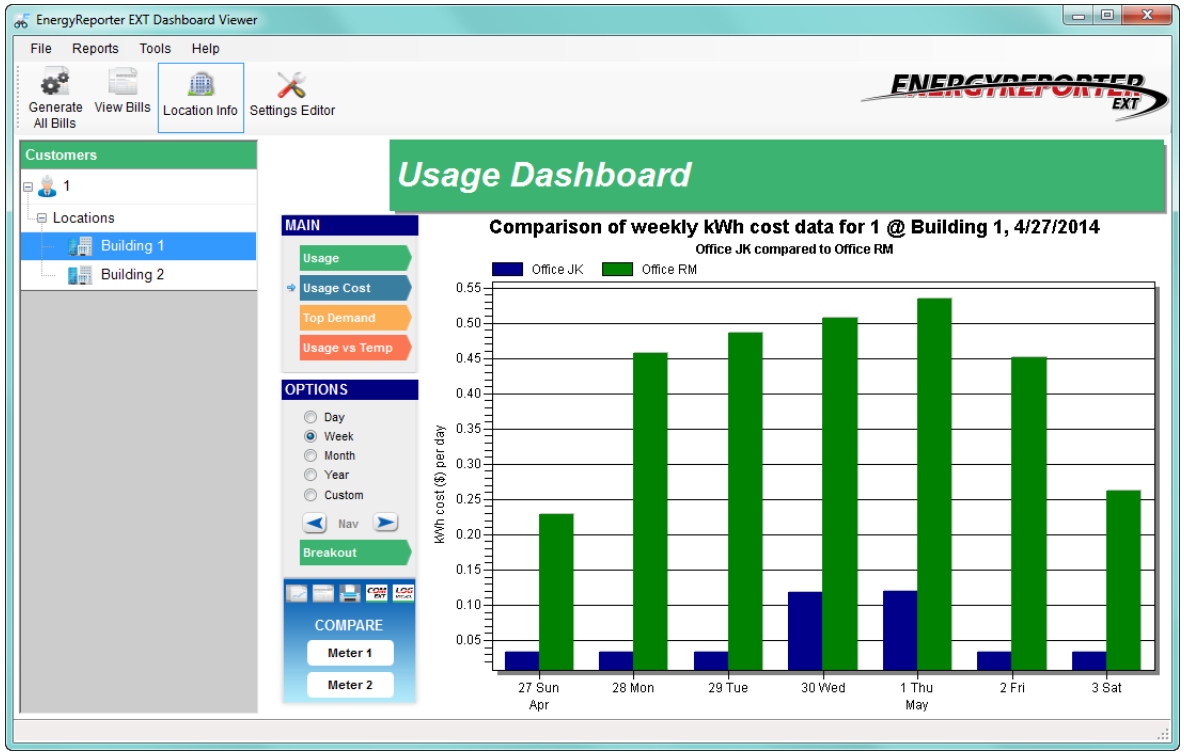


The following pages show examples of different graph selections.

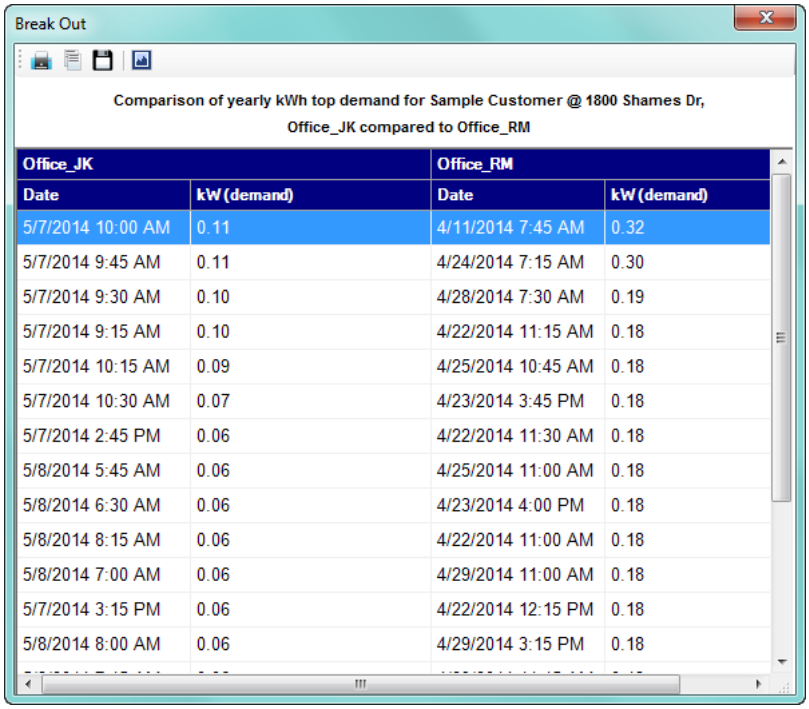
Two Meter Usage Comparison for One Month



Two Meter Usage Cost Comparison for One Week

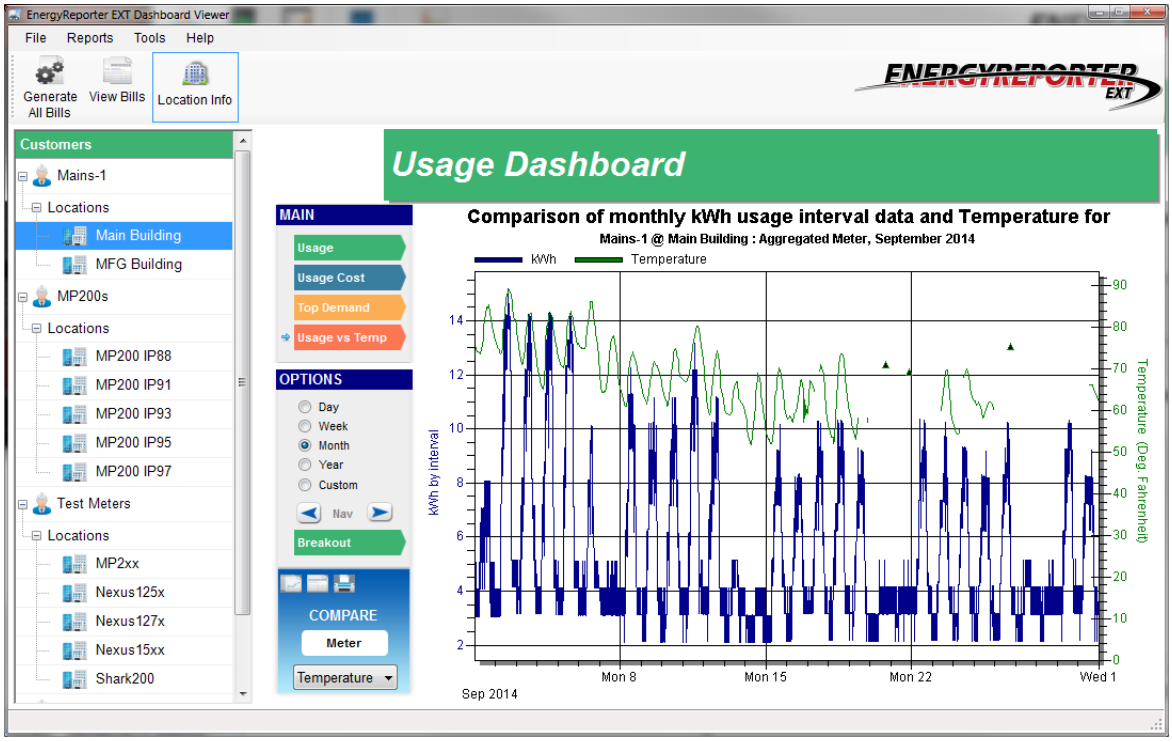


Breakout of Top Demand Comparison for Two Meters for the Year

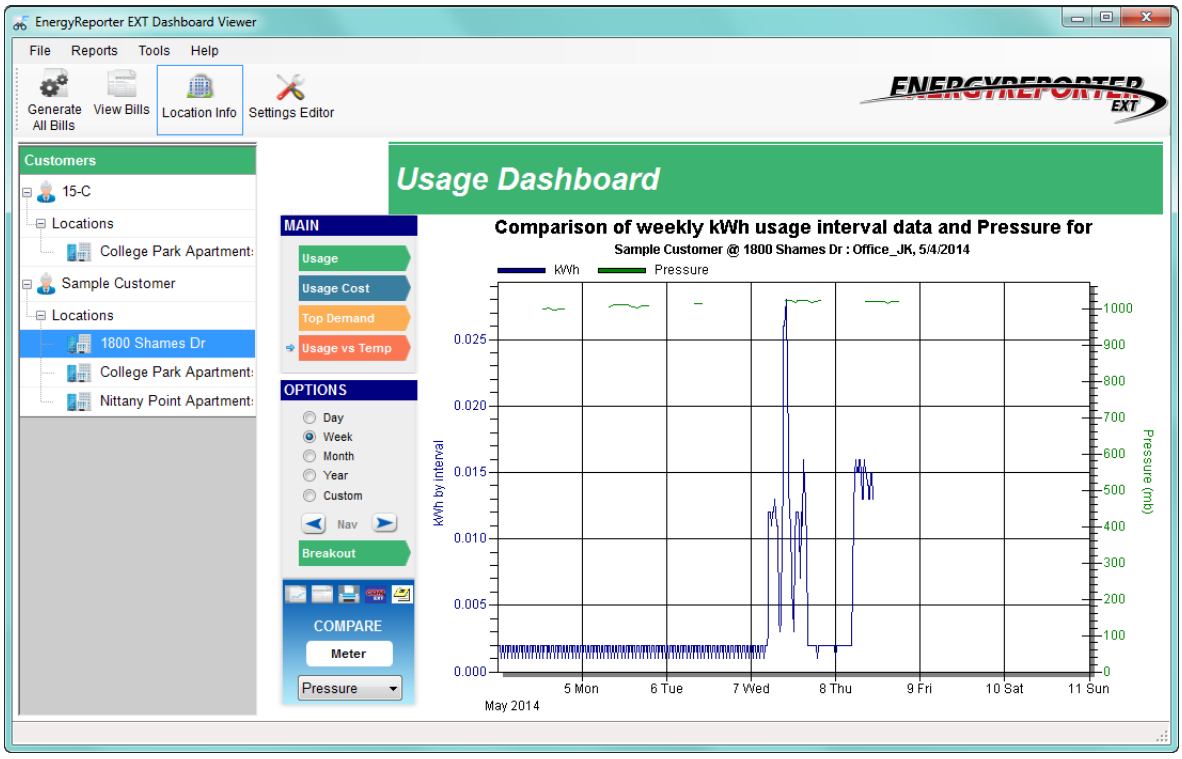


Office_JK		Office_RM	
Date	kW (demand)	Date	kW (demand)
5/7/2014 10:00 AM	0.11	4/11/2014 7:45 AM	0.32
5/7/2014 9:45 AM	0.11	4/24/2014 7:15 AM	0.30
5/7/2014 9:30 AM	0.10	4/28/2014 7:30 AM	0.19
5/7/2014 9:15 AM	0.10	4/22/2014 11:15 AM	0.18
5/7/2014 10:15 AM	0.09	4/25/2014 10:45 AM	0.18
5/7/2014 10:30 AM	0.07	4/23/2014 3:45 PM	0.18
5/7/2014 2:45 PM	0.06	4/22/2014 11:30 AM	0.18
5/8/2014 5:45 AM	0.06	4/25/2014 11:00 AM	0.18
5/8/2014 6:30 AM	0.06	4/23/2014 4:00 PM	0.18
5/8/2014 8:15 AM	0.06	4/22/2014 11:00 AM	0.18
5/8/2014 7:00 AM	0.06	4/29/2014 11:00 AM	0.18
5/7/2014 3:15 PM	0.06	4/22/2014 12:15 PM	0.18
5/8/2014 8:00 AM	0.06	4/29/2014 3:15 PM	0.18

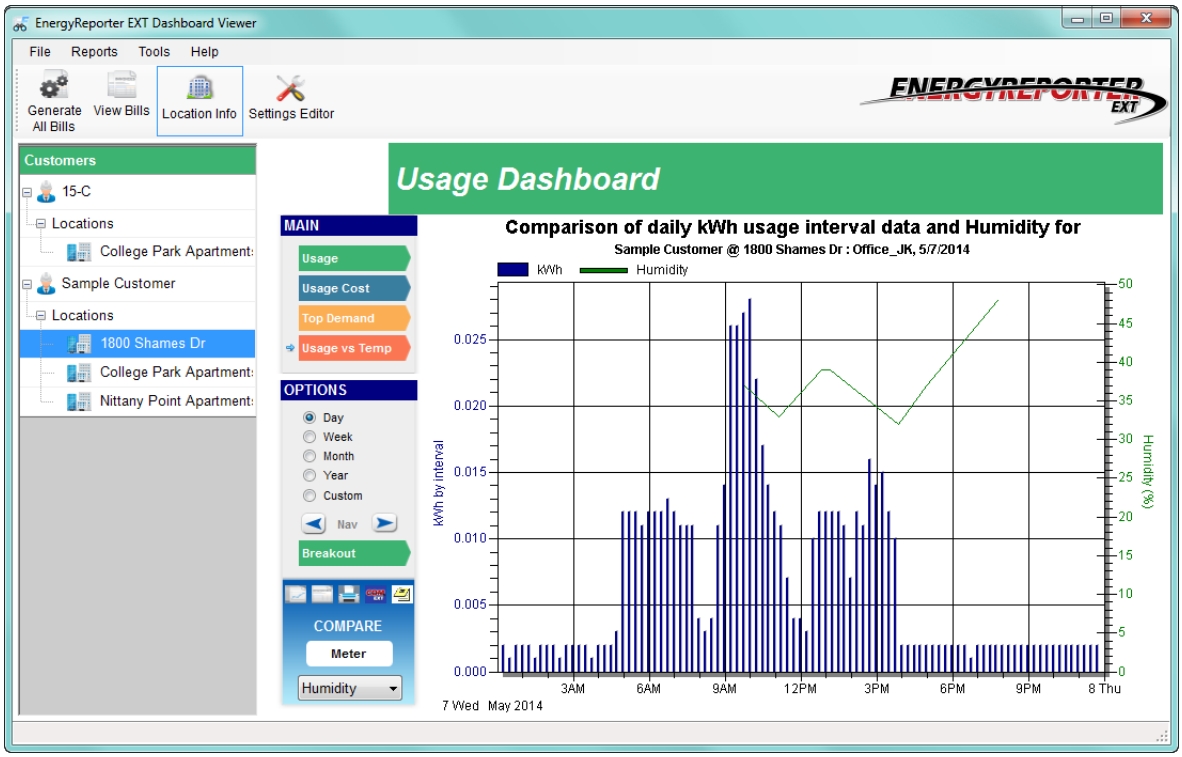
Usage Versus Weather - Temperature for the Month



Usage Versus Weather - Pressure - for One Week



Usage Versus Weather - Humidity - for One Day



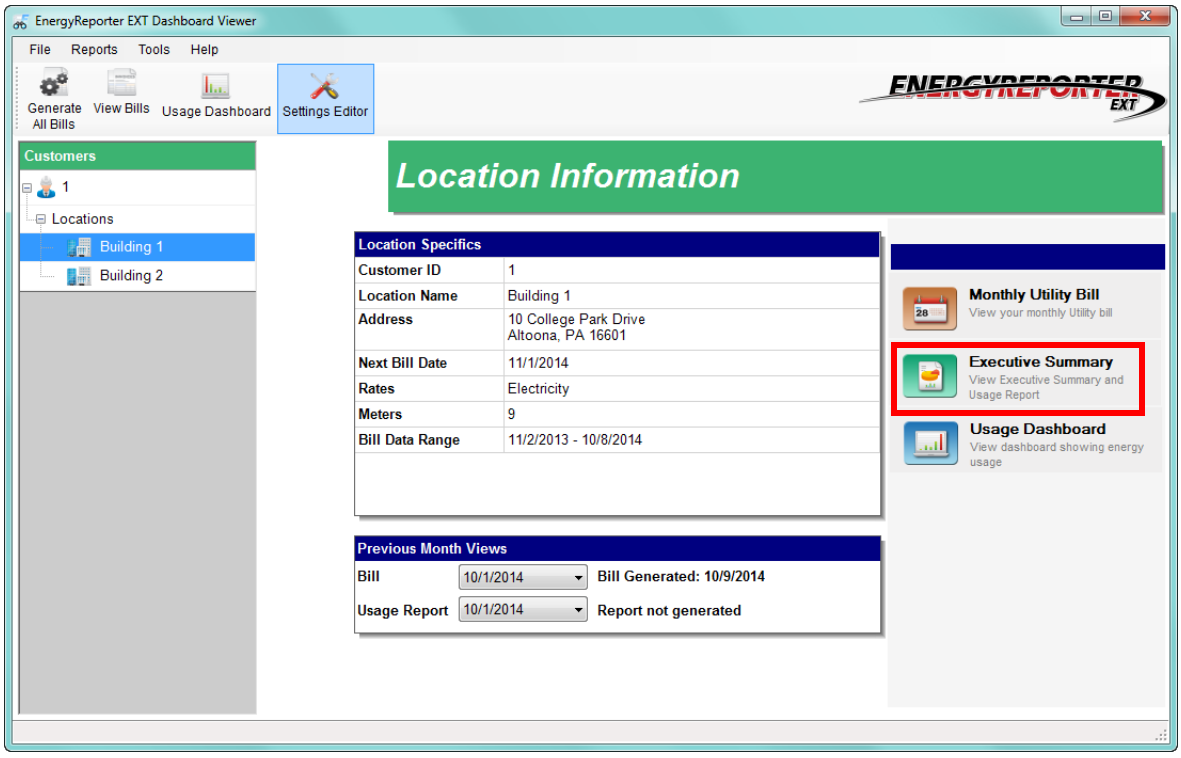
3. To exit the usage dashboard, click the Location Info icon at the top of the screen.

5.3: Generating and Viewing Usage Reports

The Executive Summary Usage Report is a customized report containing the location and data you specify, or, for all customer locations, containing extensive, detailed usage information.

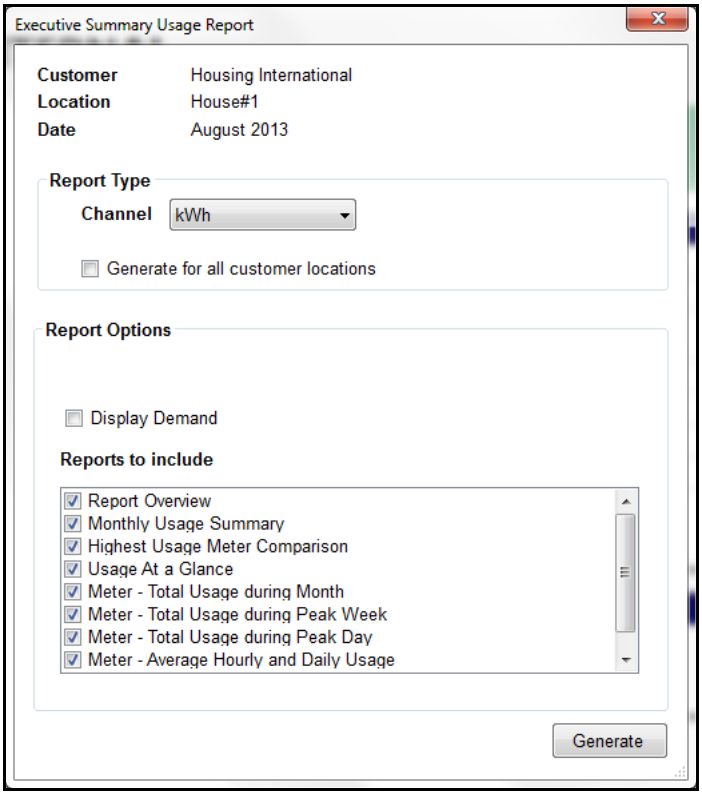
5.3.1: Executive Summary Usage Report

1. From the EnergyReporter Dashboard Viewer's Location Information screen, click the Executive Summary icon on the right side of the screen.



2. You will see the window shown on the next page. Use it to select the data you want to see in your report. This feature lets you generate a customized report with only

the data you want. For example, you can choose to view the highest usage per meter, or the total usage per meter during the Peak Day.



3. Select the channel from the pull-down menu.

4. Note that the location you are currently viewing is displayed at the top of the screen. That is the only location whose data will be shown unless you select Generate for all customer locations by clicking in its checkbox.

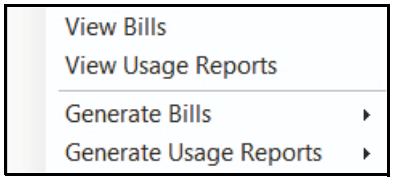
5. If you want to see demand in your report, select Display Demand by clicking in its checkbox.

6. Click the checkboxes of the data you want included in the report. By default, all of the data is selected. Click on a box to uncheck it if you don't want that data in your report.

7. Click Generate. You will see a message while the report is being generated and then it will display on the screen. A sample Executive Summary Usage Report follows.

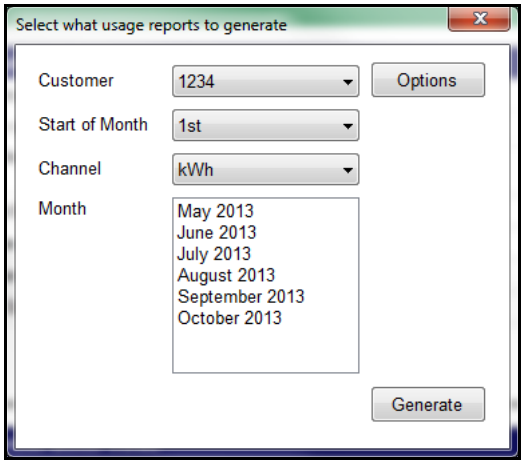
5.3.2: Generate Usage Reports

Click Reports in the EnergyReporter Dashboard Viewer main screen's Menu bar. You will see the submenu shown below.



There are two Report options - Generate Usage Reports and View Usage Reports.

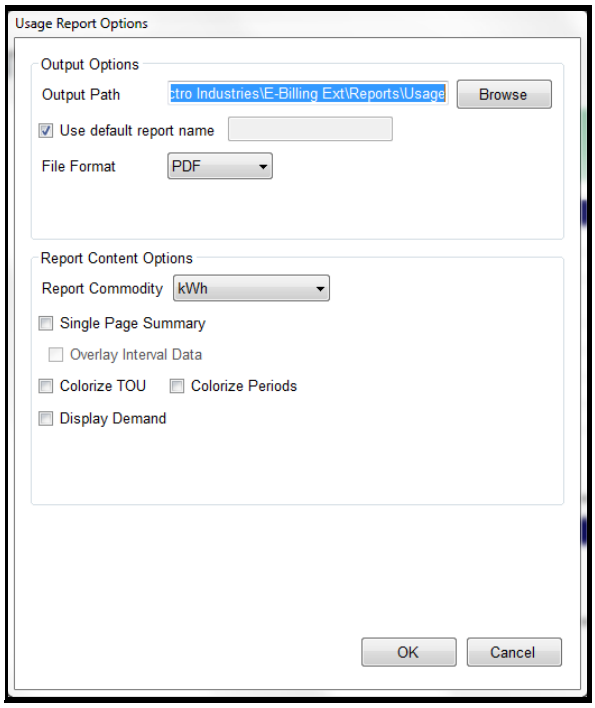
1. Click Reports>Generate Usage Reports>Generate Customer Report. You will see the screen shown below.



2. Select the customer, start date for the month, and channel. The Month box fills with the available months for the customer (the months which contain usage data).

3. Click each of the month(s) you want to create the usage report for.

4. Click Options. You will see the screen shown below.



5. Configure the following settings:

- The default path is displayed in the Output Path field. Click the Browse button if you want to choose another output path for the file. This is where the report will be saved.

- The Use Default Report Name checkbox is already selected. The default report name is the customer number, commodity, and date of the usage, e.g., 11567_kWh_2013-03 for a report of kWh usage data for March 2013 for customer number 11567. If you want to use a different name for the usage report, un-check the box and enter a name in the blank field next to it.

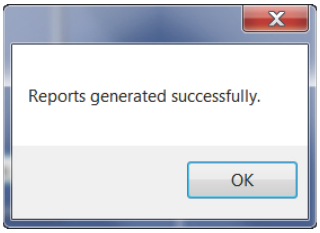
- File format: your format choices are PDF (Adobe PDF document), RTF (rich text format), or HTML (for viewing over the web).

- Report Commodity: select the commodity you want to use from the pull-down menu. Usage reports are only generated for a single commodity at a time.

- Click Single Page Summary if you want to have the month, week, and day usages on the same page.

- If you select Single Page Summary, you can also select Overlay Interval Data. Click this option if you want to have trend data or Demand data (if you select the display Demand option) on the same graph as the usage bars.
- You can select to colorize either TOU or periods.
- Display Demand: labels the Interval usage report as Demand.

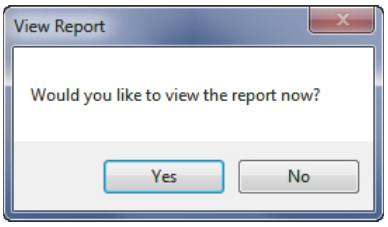
6. Click OK. The screen closes and you see the previous screen. Click Generate to process the report. You see a progress message while the report is being generated. When the process is complete, you see the following message window.



7. Click the OK button to close the message window. Another window opens asking if you want to view your report. See the next section.

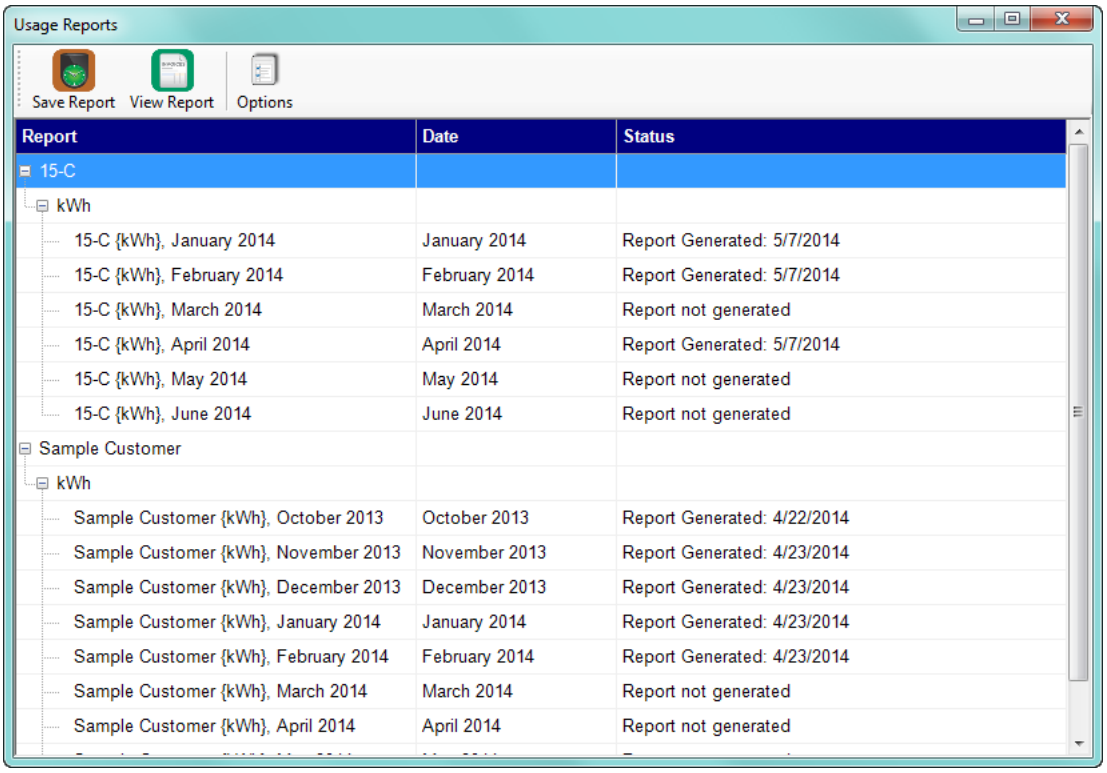
5.3.2.1: View Usage Reports

When you generate a Usage report you have the option to view it right away.



Click Yes to open the report. See the sample report in Appendix A.

1. To view Usage reports at any time, click Reports>View Usage Reports. See the example screen shown below.



Report	Date	Status
15-C		
kWh		
15-C {kWh}, January 2014	January 2014	Report Generated: 5/7/2014
15-C {kWh}, February 2014	February 2014	Report Generated: 5/7/2014
15-C {kWh}, March 2014	March 2014	Report not generated
15-C {kWh}, April 2014	April 2014	Report Generated: 5/7/2014
15-C {kWh}, May 2014	May 2014	Report not generated
15-C {kWh}, June 2014	June 2014	Report not generated
Sample Customer		
kWh		
Sample Customer {kWh}, October 2013	October 2013	Report Generated: 4/22/2014
Sample Customer {kWh}, November 2013	November 2013	Report Generated: 4/23/2014
Sample Customer {kWh}, December 2013	December 2013	Report Generated: 4/23/2014
Sample Customer {kWh}, January 2014	January 2014	Report Generated: 4/23/2014
Sample Customer {kWh}, February 2014	February 2014	Report Generated: 4/23/2014
Sample Customer {kWh}, March 2014	March 2014	Report not generated
Sample Customer {kWh}, April 2014	April 2014	Report not generated

2. This screen lets you view all of the months with usage data for customer locations. (Click on the + signs next to customer, location, and commodity to see the list of months.) Double-click on a month to view its usage report (or click on the month and click the View Report icon). See the sample report in Appendix A.

   If the report hasn't been generated yet for the month, it is generated when you select it.

3. You can also:

   - Click the Options icon to change output options before you generate another usage report, e.g., if you want to use a different format for the report. You will see the Output Options screen shown in Section 5.3.2, step 4.

   - Click the Save Report icon to open a window that lets you choose a filename and a save location for a copy of the report.

5.4: Generating and Viewing Customer Bills

You use the EnergyReporter EXT application's EnergyReporter Dashboard Viewer to generate and view bills. See the diagram below.

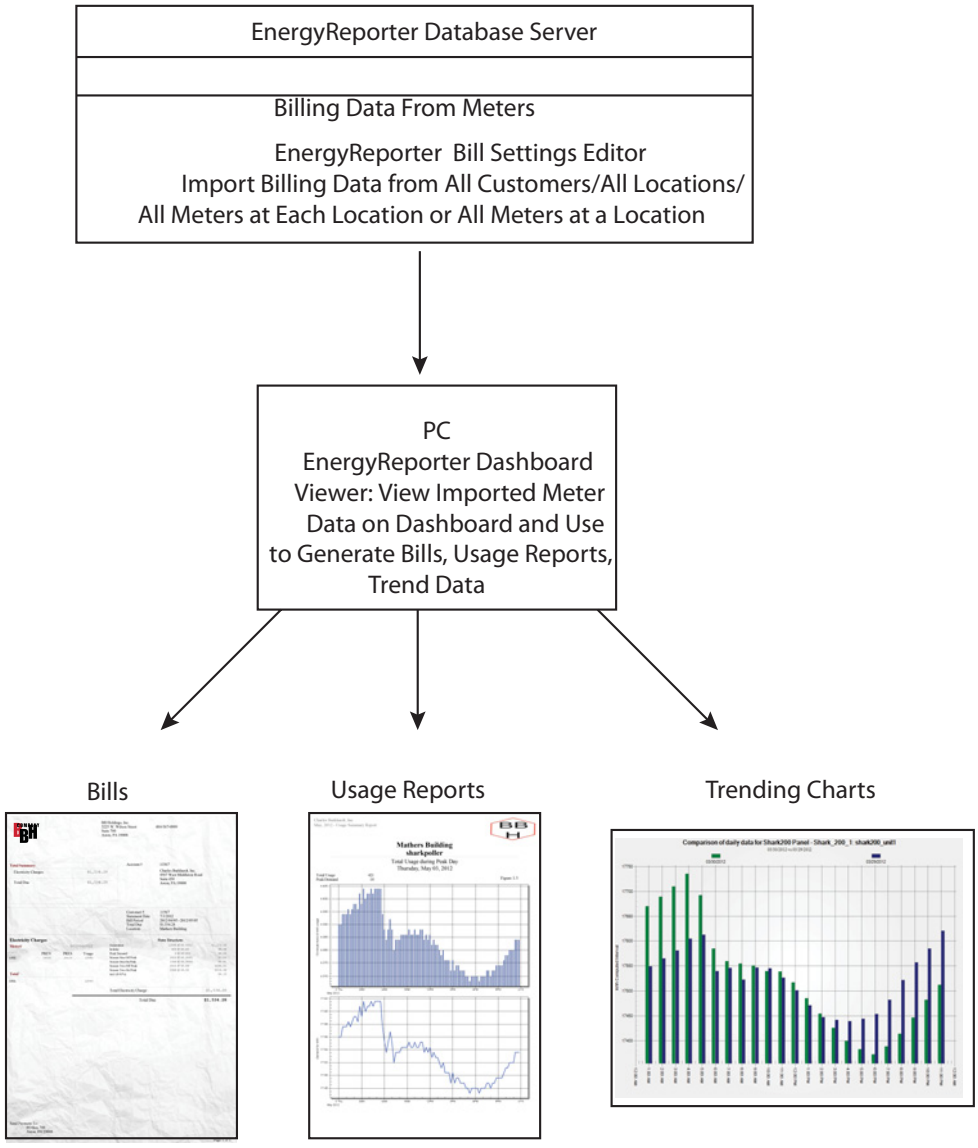


Figure 5.2: Bill Generation through the EnergyReporter EXT Application

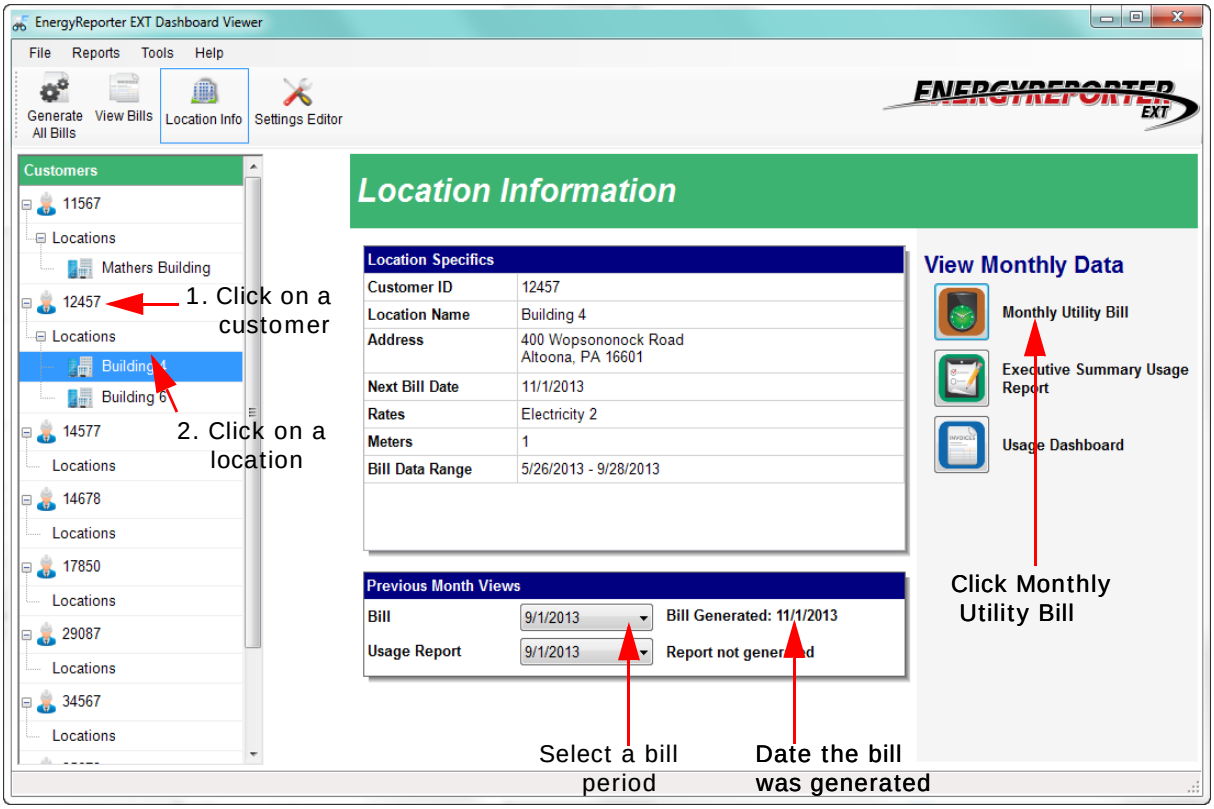
Bills and reports are automatically generated every twelve hours, for any location for which there is a full months' worth of data. You can also manually generate bills and reports if you want.

5.4.1: Individual Bills

Bills can be generated individually for a specific location and bill period.

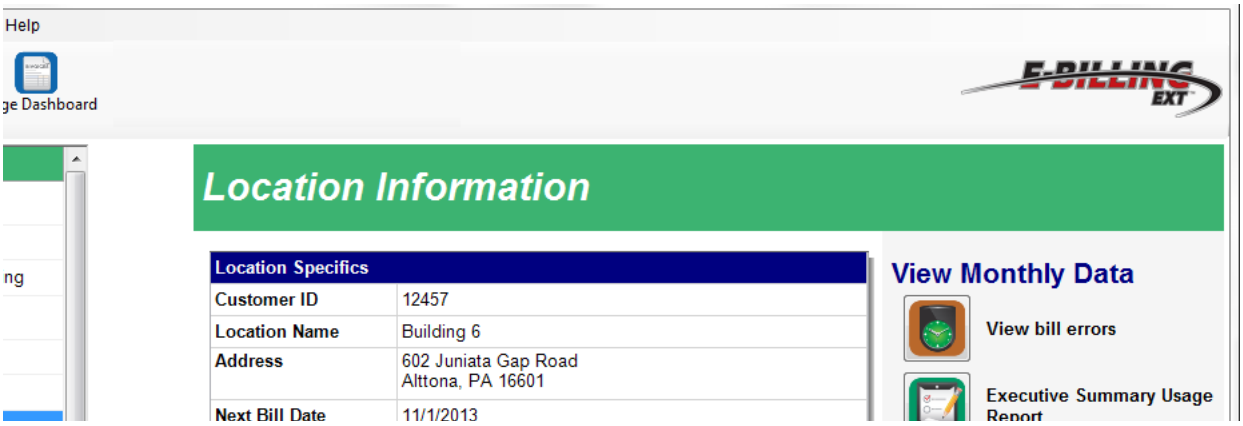
1. Select the location from the Location Tree on the left of the main screen, then select the Bill Period to view by selecting it in the list of Available Bill Data. If the bill has already been generated for the period, the bill generation date will be shown next to the billing period. See the screen shown below.

   NOTE: It may take a while for the data to be displayed if there are multiple meters at the location, or if there is a lot of data to search. Please be patient.



2. Click the Monthly Utility Bill icon. The software checks to see if the period you selected contains valid data.

   - If the Period contains errors, the View Errors icon appears (see the partial screen below). Click this icon to see a list all of the errors that prevent the bill from being generated.



- Click on a channel to view the errors in the meter data records. Follow the instructions in Section 6.1.7 to correct errors.

  NOTES:

  - Errors can only be corrected from the EnergyReporter Settings Editor.
  - Typically, the errors in .DEMAND and .INTERPOLATE.INTERVAL are caused by the problems in the Root Commodity value. Correct that value before checking the others.
  - If the Period contains no data, the Monthly Utility Bill icon is greyed out and displays the message “Unable to generate monthly bill: too many records missing from period.” This happens if you have less then 2 days’ worth of data.

3. While the Bill is being generated, the progress is displayed in a screen.

   NOTE: You can generate multiple bills for a single bill period, so if you click the Generate Monthly Bill for Selected Bill Period icon twice, you will generate two bills.

4. Once the bill is generated, it opens in your screen. See the example bill below.

Provider Information

Greater Altoona Realty Corp
10 W. 8th Street
Suite 300
Altoona, PA 16601
555-980-4785

Customer Information

Account 1

College Park Apartments
1 College Park Drive
Altoona, PA 16601

Total Summary

Electricity Charges	$19,527.44
Total Due	$19,527.44
Due Date	11/14/2014

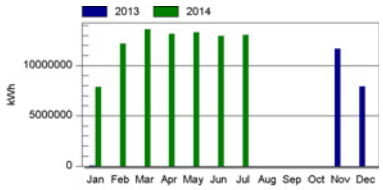
Total Charges
Due Date

Customer	1
Statement Date	10/31/2014
Bill Period	7/1/2014 - 7/31/2014 (31 Days)
Total Due	$19,527.44
Location	Building 1

Usage Chart

Meter Usage

Electricity Charges (kWh)



Meter	PREV	PRES	Usage
1500_NJD	N/A	N/A	175
1800ShamesDr	186008	206126	20118
Office DS	203	252	50
Office JK	29	38	9
Office JS	203	252	50
Office RK	1401	1578	177*
Office RM	229	293	64
Office RP	68	83	16
Shark200_Unit9	40039580	53035912	12996332
Total			13016989

Itemized Charges

Rate Structure:	Electricity	
Season Two Holiday	433198 @ $0.0015	$649.80
Season Two Off Peak	3414425 @ $0.0015	$5,121.64
Season Two On Peak	9169366 @ $0.0015	$13,754.05
Usage (0.01%)		$1.95
Total Electricity Charge		$19,527.44

Total Due **$19,527.44**

Provider Notes

Thank you for your prompt payment.

NOTE: If this bill was generated from Interval Energy data, there will be no PREV(ious) or PRES(ent) usage values.

Remittance Address

Send Payment To:
Greater Altoona Realty Corp
PO Box 3452
Altoona, PA 16601-3452

Page 1 of 1

5.4.2: Generate Bills Manually

Bills are generated manually from the EnergyReporter Dashboard Viewer. When a bill is generated, the software analyzes the usage data for the meters at a location, and applies the configured rate structure to that data.

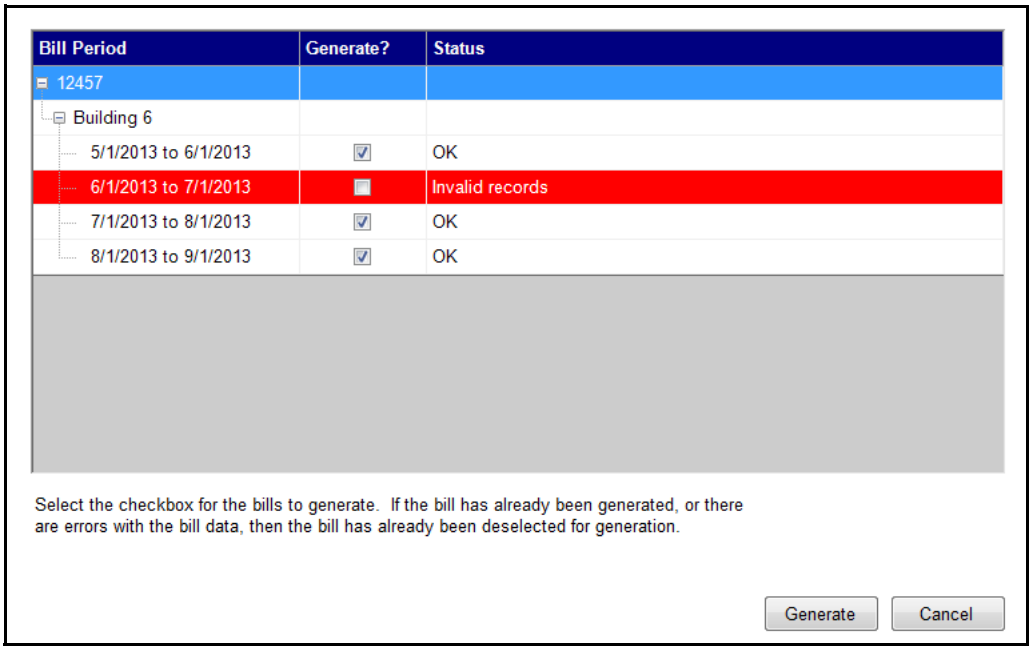
A bill is always generated for a bill period, which is the date range from the billing date of the previous month, to the billing date of the current month. A bill period need not contain a full month's worth of data: a bill can be manually generated if there is at least two days' worth of data.

Generate All Bills

1. From the EnergyReporter Dashboard Viewer main screen, click the Generate All Bills icon.

2. While the software is scanning for bills to generate, the list of periods found so far are displayed. You can stop the scan at any time to generate bills from the list of values scanned so far: to do so, click Cancel.

3. When scanning is done (or after you've clicked Cancel), the list of available periods is displayed. See the screen shown below.



4. Select which periods you want to generate bills for by clicking in the Generate box. By default, all periods which have no errors, and haven't been generated before,

are selected for generating bills (their box is checked).

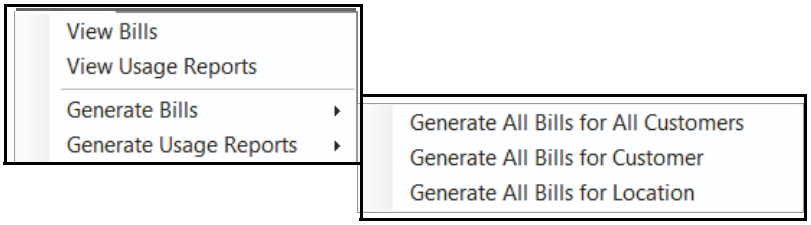
NOTES:

- Any period which already has a bill generated for it appears in grey with an unchecked box. You can still select it, if you want to generate another bill for that period, e.g., if the meter's data was changed after the bill was generated. This can happen if you generate a bill before the end of the month.
- Any period which contains errors, or is missing too much data, appears in red. You cannot generate bills for these periods until you correct the errors (see Section 6.1.7 for instructions).

5. When you've selected all the periods you want to generate bills for, click Generate. While the bill is being generated, the progress is displayed. The Bills to Generate screen closes once the bills have been generated.

Generate All Bills for Customers/Location

Since the Generate All Bills option can take a long time to complete, the EnergyReporter EXT application gives you two additional options for generating a smaller number of bills. Access these options from the Reports>Generate Bills submenu from the EnergyReporter Dashboard Viewer main screen's Menu bar. The submenu is shown below.



- Click Generate All Bills for Customer to generate all available bills for all locations for the selected customer (the customer currently displayed on the screen).
- Click Generate All Bills for Location to generate all available bills for the selected location (the location currently displayed on the screen).

You will see the Bills to Generate screen shown on the previous page. The instructions are the same as those shown in the **Generate All Bills** section on the previous page, steps 4 and 5.

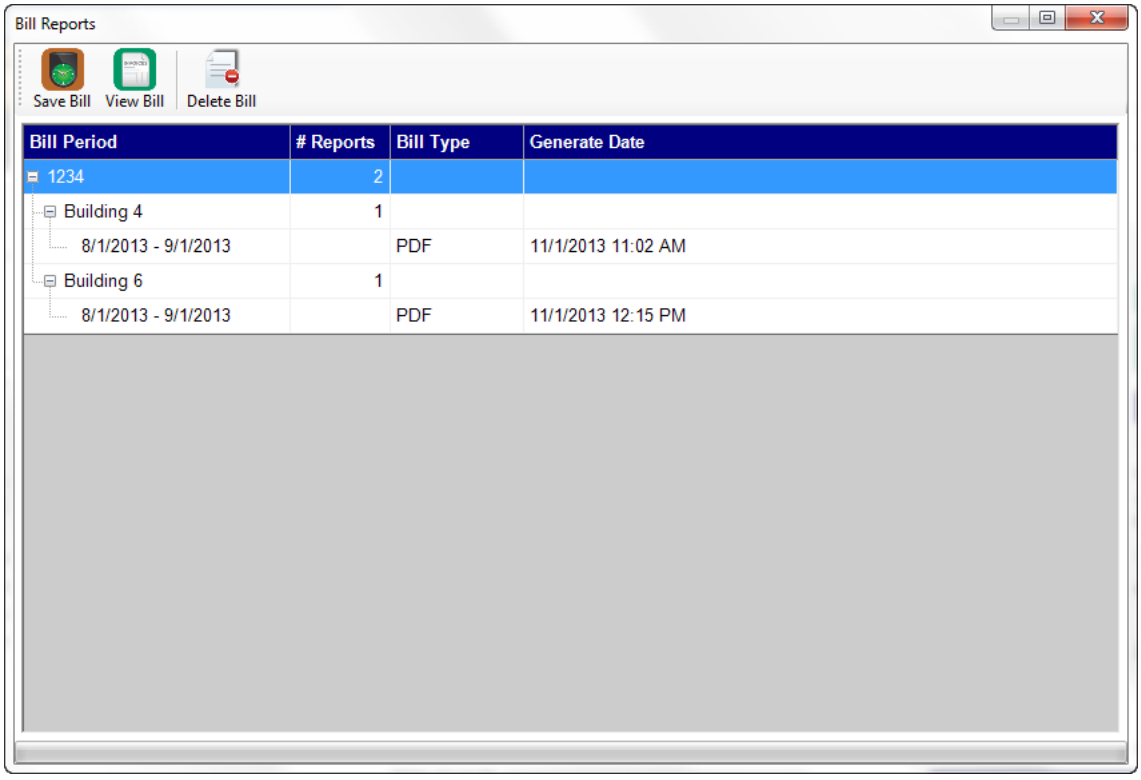
NOTE: The Generate All Bills for All Customers option is the same as the Generate All Bills option on the previous page.

5.4.3: View Bills

You can view generated bills either by clicking the View Bills icon in the EnergyReporter Dashboard Viewer's main screen, or by clicking Reports>View Bills from the screen's Menu bar.

NOTE: The viewed bill is just a temporary file that has been downloaded from the EnergyReporter EXT Database server, where the bills are stored. Any changes you make to it are not saved on the Database server.

1. The list of all generated bills displays. See the example screen below.



2. Click on the + sign next to the customer to display the location; then click on the + sign next to the location to display the bills for the location.

3. Click on the bill you want to view and click the View Bill icon. A PDF of the bill opens (see the example bill on the previous page).

4. You have the following options:

   - To save a copy of the bill on your computer, click the Save Bill icon. (Bills are stored on the database server. To get a local copy, you need to save the bill on

your computer.) A screen opens which lets you choose the location of the saved bill and give it a filename.

- To delete the bill, click the Delete Bill icon. A Confirmation window opens. Click Yes to delete the bill; click No to keep the bill.

  WARNING! Be careful when deleting bills. Once you delete a bill, it is removed from the server. (You can re-generate the bill later.)

  You can delete multiple bills by selecting a range of bills, and clicking Delete. Make sure that you've selected **only** the bills you want to delete.

  WARNING! Be careful when deleting across multiple locations, as it is easy to select more bills than you intend, or miss some you want to delete.

  NOTE: Removing a customer or location from the system doesn't delete the bills that have already been generated for them. If you want to get rid of the bills, you must delete them manually.

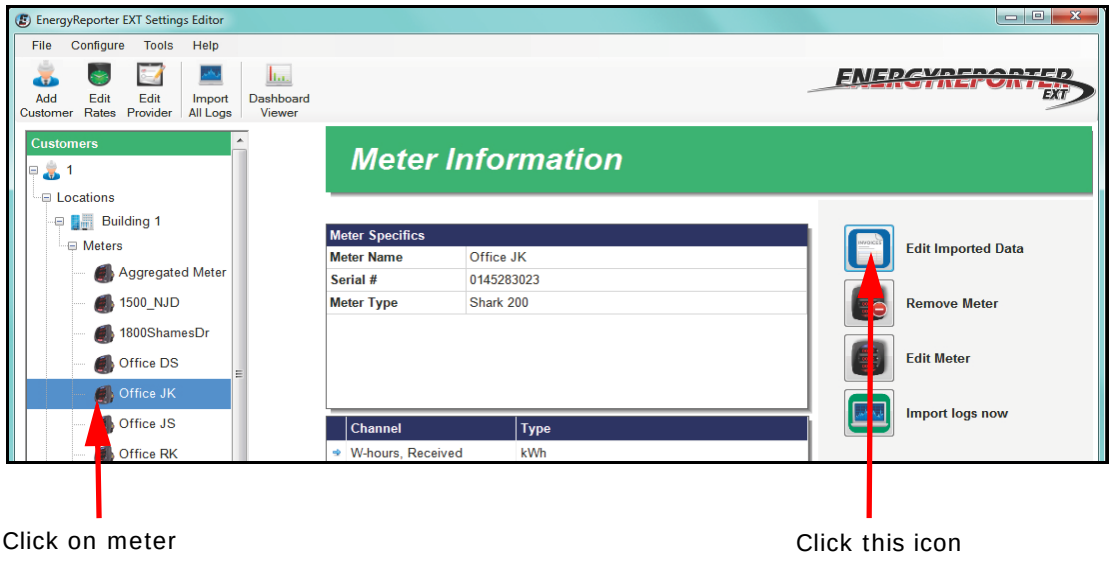
6: Managing Data

The EnergyReporter EXT application gives you access to the usage data in a variety of ways. You can view the data, copy it, export it, and correct any errors in the meter data.

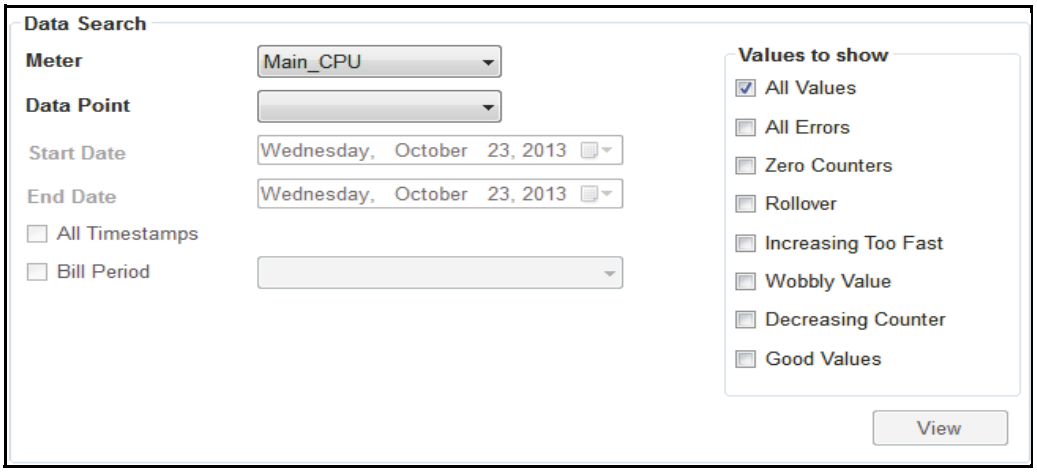
6.1: View/Copy/Export Meter Data

Follow these steps to view, copy, or export the imported meter data.

1. From the EnergyReporter Settings Editor main screen, use the Tree menu on the left of the screen to navigate to the meter you want. See the example screen below.



2. Click the Edit Imported Data icon.



3. This screen lets you choose which data point (channel), date range, and type of values you want to view.

   - Meter: from the pull-down menu, select the meter whose data you want to view. Only meters at the currently selected location are shown.

   - Data Point: the channel of the data to view. There are typically three values for each commodity:

     a. <commodity>: this is the value from the meter's logs. These are your base usage values, and are the only values you can change, as all other values are computed from this value; e.g., kWh. If you want to view the "raw" usage data from the meter, select this option.

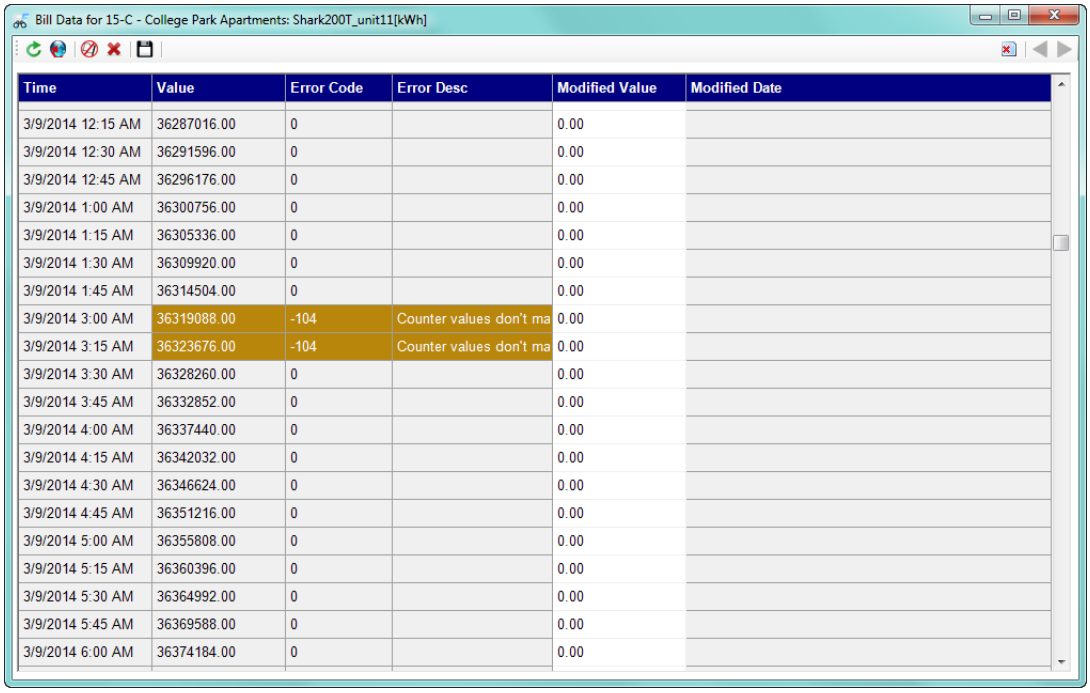
     b. <commodity>.interpolate.interval: this is the computed interval value of the commodity, typically in 15 minute periods. The values are interpolated from the root commodity values to correct for odd timestamps and missing data. These values cannot be changed, as they are computed from the root commodity; e.g., kWh. If you want to view the computed interval values, select this option.

     c. <commodity>.DEMAND: this is the maximum Demand for an hour period, computed from the interpolated interval values for the previous hour. These values cannot be changed, as they are computed from the root commodity; e.g., kWh.DEMAND. If you want to view the max Demand, select this option.

- Start Date: the start date of the data to show. You can only change this field when All Timestamps and Bill Period are unchecked.
- End Date: the end date of the data to show. You can only change this field when All Timestamps and Bill Period are unchecked.
- All Timestamps: select this checkbox to automatically select the entire range of stored data to show.
- Bill Period: select this checkbox to see the date range of the billing data in all available billing periods. Click the pull-down menu to display the date ranges. When you select a date range, the beginning and ending date are displayed in the Start Date and End Date fields.
- Values to Show: the checkboxes provide filters, so that only the data you want to see is shown, e.g., only Errors.
    - All Values: show all the values. If this is selected, no other option is valid.
    - Rollover: show values flagged as a rollover. This occurs when the previous value is near the configured rollover point, and the current value is near zero. This is not considered an error.
    - Increasing Too Fast: show values flagged as increasing too fast. Values which are increasing more then 3 times the trend in the previous hour are considered as increasing too fast, and might indicate a problem. This is considered an error, and must be cleared before a bill can be generated.
    - Decreasing Counter: show values flagged as a decreasing counter. Except for the Rollover condition, counters (such as Energy and pulse accumulators, used for Commodities) should never decrease. If they do, this indicates a problem, and must be cleared before a bill can be generated.
    - Good Values: show values which are not flagged with an error condition.

4. Once you've selected the filters you want to use, click View. The data is retrieved from the database and displayed. Values which are flagged as a warning are shown in Green. Values which are errors and will prevent a bill from being generated are

shown in Red. See the example screen below.



Time	Value	Error Code	Error Desc	Modified Value	Modified Date
3/9/2014 12:15 AM	36287016.00	0		0.00	
3/9/2014 12:30 AM	36291596.00	0		0.00	
3/9/2014 12:45 AM	36296176.00	0		0.00	
3/9/2014 1:00 AM	36300756.00	0		0.00	
3/9/2014 1:15 AM	36305336.00	0		0.00	
3/9/2014 1:30 AM	36309920.00	0		0.00	
3/9/2014 1:45 AM	36314504.00	0		0.00	
3/9/2014 3:00 AM	36319088.00	-104	Counter values don't ma	0.00	
3/9/2014 3:15 AM	36323676.00	-104	Counter values don't ma	0.00	
3/9/2014 3:30 AM	36328260.00	0		0.00	
3/9/2014 3:45 AM	36332852.00	0		0.00	
3/9/2014 4:00 AM	36337440.00	0		0.00	
3/9/2014 4:15 AM	36342032.00	0		0.00	
3/9/2014 4:30 AM	36346624.00	0		0.00	
3/9/2014 4:45 AM	36351216.00	0		0.00	
3/9/2014 5:00 AM	36355808.00	0		0.00	
3/9/2014 5:15 AM	36360396.00	0		0.00	
3/9/2014 5:30 AM	36364992.00	0		0.00	
3/9/2014 5:45 AM	36369588.00	0		0.00	
3/9/2014 6:00 AM	36374184.00	0		0.00	

This screen lets you view the values, correct any errors in the data, and export the data for external use.

NOTES:

- This screen is available from both the EnergyReporter Settings Editor and the EnergyReporter Dashboard Viewer, but you can only modify the values using the screen from the EnergyReporter Settings Editor. To view this screen from the EnergyReporter Dashboard Viewer, select the meter whose data you want to view and click Tools > View Bill Data. Only 20,000 points are displayed on the interface at any time. If you are trying to view more than that number of points, click the Next and Previous buttons to scroll the data.

- The preferred method for correcting data errors is described in Section 6.2.

- The buttons on the top of the screen and their functions are shown below.

Refresh: click after Update Data icon to display changes

Update Data: click after making changes

Click to clear an Invalid Flag from the currently selected data value

Click to Delete/Undelete the currently selected data value

Click to export data (see Section 6.1.1)

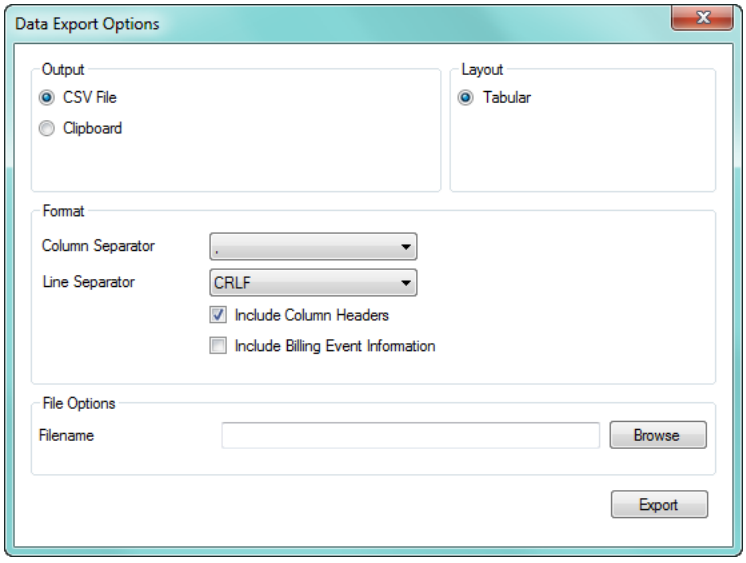
Click to show data values that have been removed - then you can click the Undelete icon and the Update Data icon to restore the value

6.1.1: Export Meters Data

You can export meter data in two ways.

From the Edit Imported Data Screen (shown in Section 6.1: only for EnergyReporter Settings Editor)

1. Click the Export Data icon shown above.



This screen lets you export the data to either the clipboard or a .csv file. Then you can copy the data into another application, such as the Microsoft Excel® application, or use it in your own applications.

2. Use the options in the Output box to specify where to export the data:

- CSV File: exports the data to a CSV (Comma Separated Value) Text file (though you can select other than commas to separate the exported values). When you select this option, you must enter a Filename in the bottom of the screen.

- Clipboard: exports the data to the clipboard. Be careful when using this option, as the amount of data being exported may be very large. When you select this option, you do not enter a filename.

3. The setting in the Layout box controls the layout of the data being exported. The only option is Tabular, which means the data is exported in a table format: rows are data entries and columns are fields.

4. The settings in the Format box control how the output is formatted.

   - Column Separator: use this setting to select the character used to separate fields in a row.
     - Comma (‘,’) is the most common separator.
     - Tab should be selected if you plan to paste the data into a spreadsheet program, e.g., the Microsoft Excel® application.
     - Space should be selected if needed by your application.

   - Line Separator: use this setting to configure the sequence of characters used to indicate the end of a row. Your options are CRLF and LF. Different operating systems and software applications expect different line endings, but CRLF is the most common.

   - Include Column Headers: click this box to put the name of the field at the top of the column, before the start of the data. You may want to leave this box unchecked when using automated processing, if your application doesn’t know to discard the first line (the column headings).

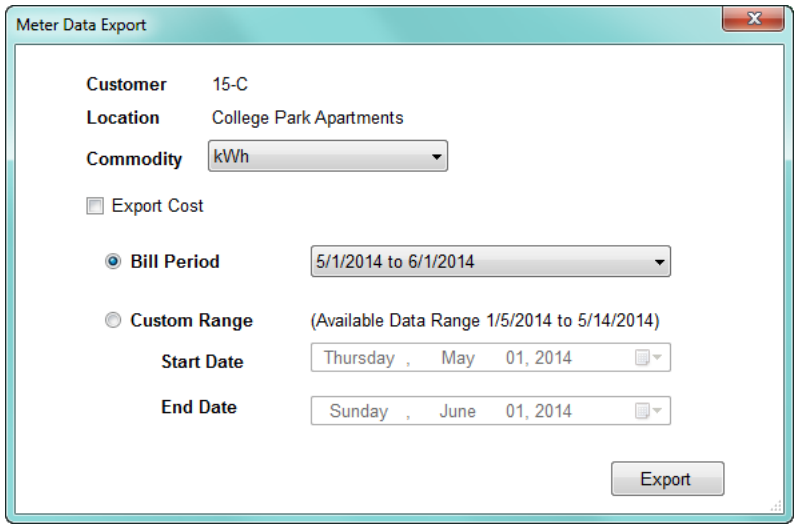
   - Include Billing Event Information: click this box to export analysis information, such as error code or modified date, along with the regular data. If you leave this box unchecked, only the Timestamp and Value are exported.

5. File Options: you will see this field if you choose the .csv file Output option. Click Browse to locate the directory for your file and enter a filename.

6. Click Export to export the data. You will see a Confirmation window when the export is complete. Click OK to close the window and the Data Export Options screen.

From the Tools>Export Meters Data (for either the EnergyReporter Settings Editor or the EnergyReporter Dashboard Viewer.)

1. Click Tools>Export Meters Data.



2. The currently selected customer and location are displayed in the screen.

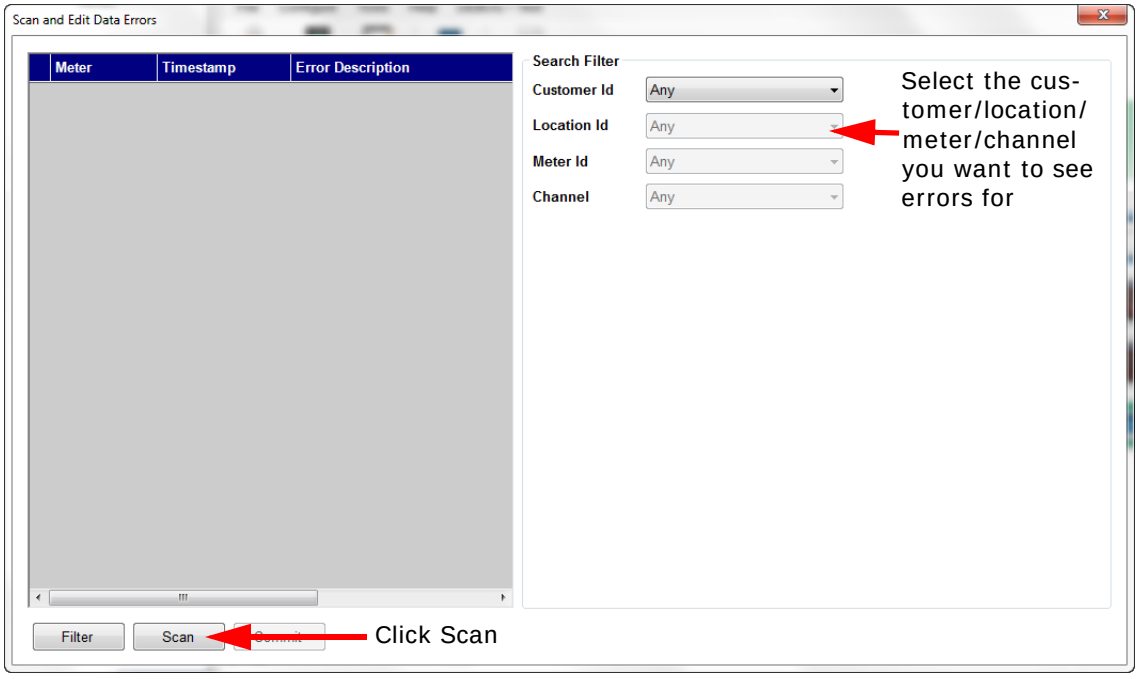
   - Select Commodity from the pull-down menu
   - Click the Export Cost checkbox if you want cost data exported
   - Either click Bill Period and select a period from the pull-down menu, or click Custom Range and select the Start and End Date from the pull-down menus.

3. Click Export. A window opens letting you select the location of the .csv file. You can the copy the data into another application, such as the Microsoft Excel® application, or use it in your own applications.

6.2: Edit Data Errors

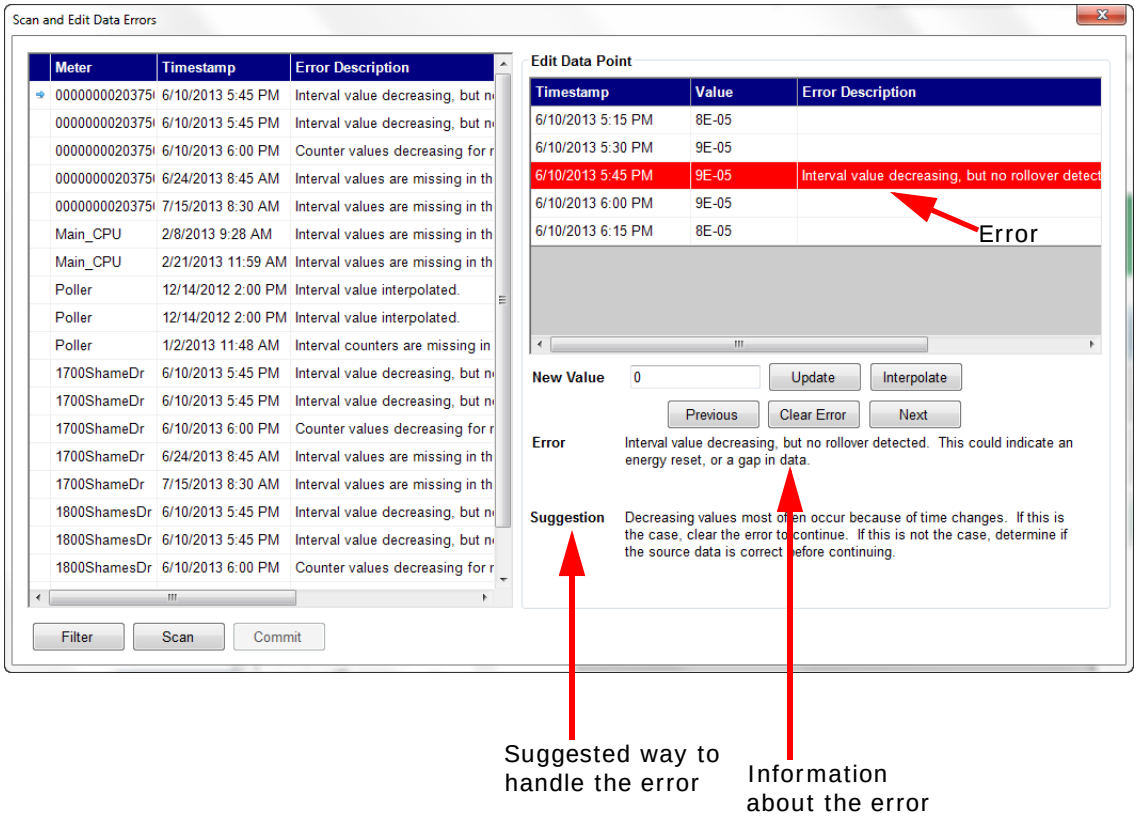
Following is the recommended procedure for correcting data errors, for example, zero values due to problems in communication.

1. From the EnergyReporter Settings Editor Main screen, click Tools>Edit Data Errors. You will see the screen shown below.



2. You use the fields on the right side of the screen to refine your search for data errors. You can specify customer, location, meter, and/or channel, or select Any which will display data errors for all of the entries in that field; for example, to see data errors for all of the meters at a location, select the Location from the Location ID pull-down menu, and then select Any from the Meter ID pull-down menu.

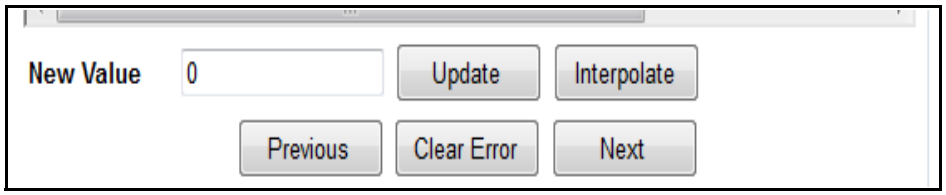
3. Click Scan to cause the software to begin looking for the data errors. When scanning is done, any errors will display on the left side of the screen, along with the meter and timestamp. The fields on the left display the Error Description field, and detailed information regarding the error and ways to handle it are displayed on the right side of the screen. See the example below.


Scan and Edit Data Errors
Meter
Timestamp
Error Description
Edit Data Point
Timestamp
Value
Error Description
6/10/2013 5:15 PM 8E-05
6/10/2013 5:30 PM 9E-05
6/10/2013 5:45 PM 9E-05 Interval value decreasing, but no rollover detect
6/10/2013 6:00 PM 9E-05
6/10/2013 6:15 PM 8E-05
Error
New Value
0
Update
Interpolate
Previous
Clear Error
Next
Error
Interval value decreasing, but no rollover detected. This could indicate an energy reset, or a gap in data.
Suggestion
Decreasing values most often occur because of time changes. If this is the case, clear the error to continue. If this is not the case, determine if the source data is correct before continuing.
Filter
Scan
Commit
Suggested way to handle the error
Information about the error

- The top right of the screen displays the timestamp and value of the erroneous data and the timestamps and values around it, to help you diagnose the error and decide what to do about it.

- The bottom right of the screen gives information about the error and the suggested way to handle it.

- The middle right of the screen contains options you can use to handle the error.



4. Use the options shown above to handle the erroneous data:

   - New Value: if you know what the value should be, enter it in this field. If the value is wrong, but you don't know what it should be, use Interpolate (see information below).

   - Update: after entering a new value, click this button. The next error, if there is one, is displayed. Update uses the new value for the error record. It doesn't clear the error, though, so if the new value is wrong, it will still be an error.

   - Interpolate: if you don't know what the value should be, click this button to have the software calculate the new value for you. The software can only do this if there are enough intervals before and after the error for it to compute the value from.

   - Clear Error: if the error is not something that you can correct by entering a new value, e.g., missing data, click this button. This flags the value as valid, and tells the system that you want to use this value to compute reports.

   - Previous: to view the error before this one, click this button.

   - Next: to view the error after this one, click this button.

5. Click the Commit button to save all your changes. The software re-analyzes the data, and presents the results in the Scan and Edit Errors screen. If all the data is good, the screen should show no errors.

6. If you have any more errors to correct, click Filter to re-display the selection fields on the right side of the screen, and then click Scan to view and address the errors. If you do not have any more errors to correct, click X to close the window.

6.3: Re-Aggregate All Locations

You can force all aggregate meters to reaggregate the data from their locations:

1. From the EnergyReporter Settings Editor, click Tools>Database Maintenance>Re-aggregate all Locations.

2. You will see a progress screen as the re-aggregation is taking place.

6.4: Rebuild Period Analysis

All data ranges are based off the Period Analysis, to provide faster access to data. You can force each location to rebuild this analysis:

1. From the EnergyReporter Settings Editor, click Tools>Database Maintenance>Rebuild Period Analysis.

2. You will see a progress screen as the rebuilding takes place.

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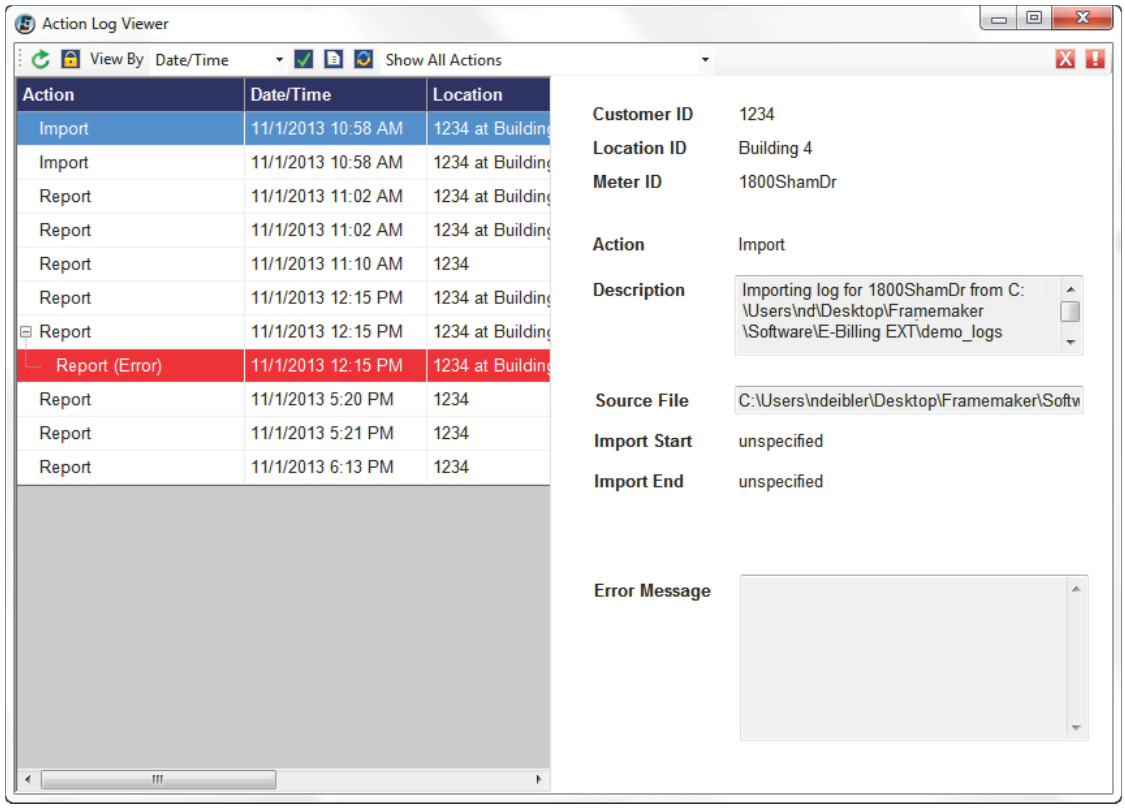
7: Additional Features and Advanced Functions

7.1: Viewing the Action Log

The EnergyReporter EXT application has a log in which actions such as importing, generating bills, updating data and sending emails are stored. You can view this log through the Action Log Viewer, which is available from the EnergyReporter Settings Editor. In addition, errors can be viewed and corrected from the Action Log Viewer.

1. From the EnergyReporter Settings Editor, click Tools>View Action Log. See the example screen below.


Action Log Viewer
View By Date/Time
Show All Actions
Action
Date/Time
Location
Import 11/1/2013 10:58 AM 1234 at Building
Import 11/1/2013 10:58 AM 1234 at Building
Report 11/1/2013 11:02 AM 1234 at Building
Report 11/1/2013 11:02 AM 1234 at Building
Report 11/1/2013 11:10 AM 1234
Report 11/1/2013 12:15 PM 1234 at Building
Report 11/1/2013 12:15 PM 1234 at Building
Report (Error) 11/1/2013 12:15 PM 1234 at Building
Report 11/1/2013 5:20 PM 1234
Report 11/1/2013 5:21 PM 1234
Report 11/1/2013 6:13 PM 1234
Customer ID 1234
Location ID Building 4
Meter ID 1800ShamDr
Action Import
Description Importing log for 1800ShamDr from C:\Users\nd\Desktop\Framemaker\Software\E-Billing EXT\demo_logs
Source File C:\Users\ndeibler\Desktop\Framemaker\Softw
Import Start unspecified
Import End unspecified
Error Message

2. The actions are shown in the left side of the screen. Any errors are shown in red.

3. Click on an action to display information about it in the right side of the screen.

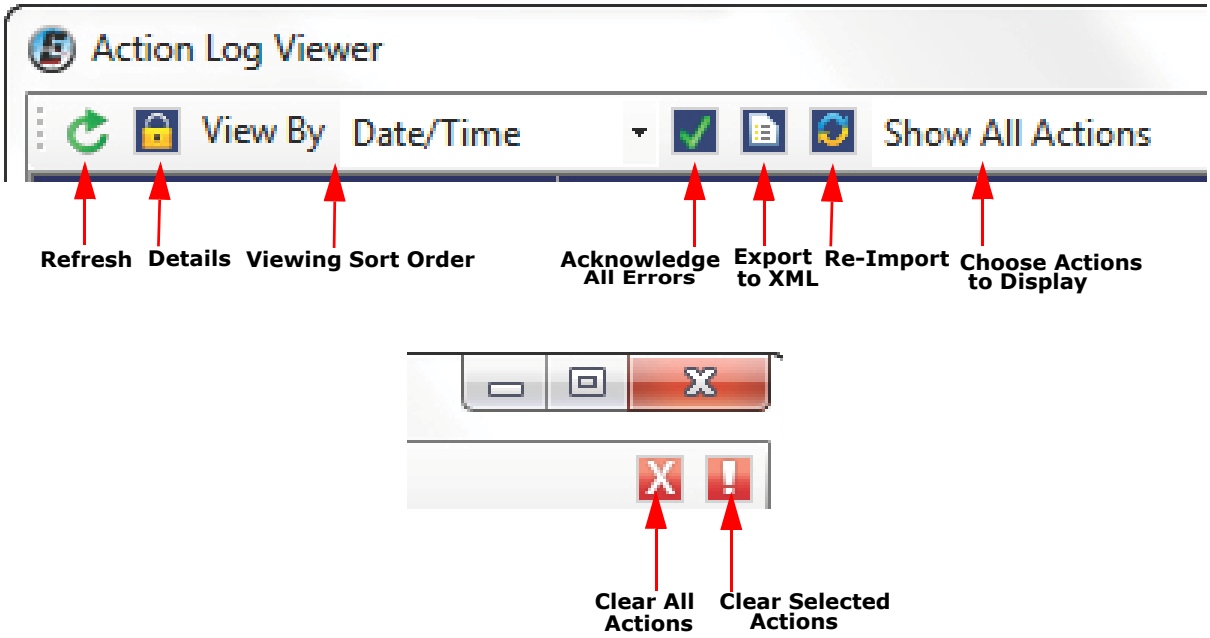
4. To display options, right-click on the action or error:

   - If you right-click on an action, you can select to:
     - Repeat the action, e.g., re-import data if the action is “Importing”

- Acknowledge All Errors: they won't show in red anymore.
- Delete Selected Actions: remove the action from the action log
- Hide Details/Show Details: this option toggles between hiding or displaying the detailed information on the right side of the screen.

- If you right-click on an Error, you have an additional option:
  - Mark as Acknowledged Error/Mark as Unacknowledged Error: this option toggles between acknowledging the error and removing acknowledgement of the error.

5. The options at the top of the screen let you:



- Refresh the action display by clicking the Refresh icon.
- Select the order of action display by clicking in the View By pull-down menu. The choices are Date/Time (the default setting), Customers, and Action Type.
- Acknowledge all Errors by clicking the checkmark icon.
- Export to XML by checking the document icon: this copies the action log in XML format - you can then paste it into an XML file.
- Re-import meter data by selecting the two arrows icon.

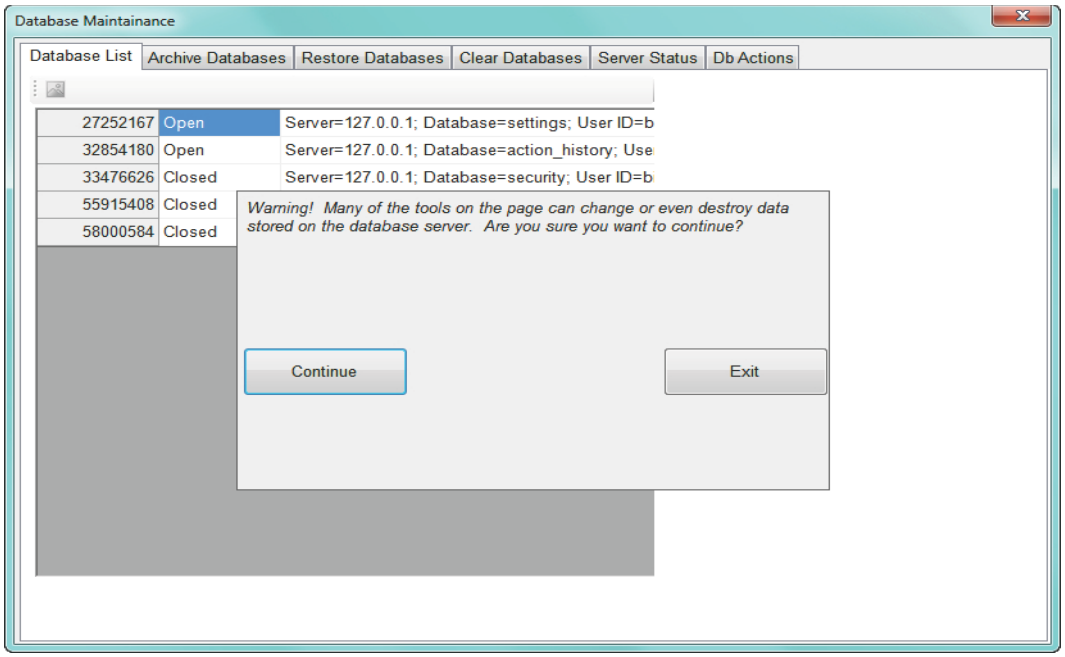
- Select between Show All Actions and Select Unacknowledged Action Errors from the pull-down menu.
- Clear all actions by clicking the red X. You will see a Confirmation message window.
- Clear any selected action (highlighted action) by clicking the red exclamation point.You will see a Confirmation message window.

6. If there is an error associated with an action, you can correct the error and then perform the action again from the Action Log Viewer screen. For example, if there is an error in importing, you can correct it, and then click on the original action and select Re-import Data.

7.2: Database Maintenance

The EnergyReporter Settings Editor gives you options for maintaining the EnergyReporter EXT database. To access these options:

1. From the EnergyReporter Settings Editor, click Tools>Database Maintenance>Maintenance Utilities from the main screen's Menu bar. You will see the screen shown below, displaying a warning message.

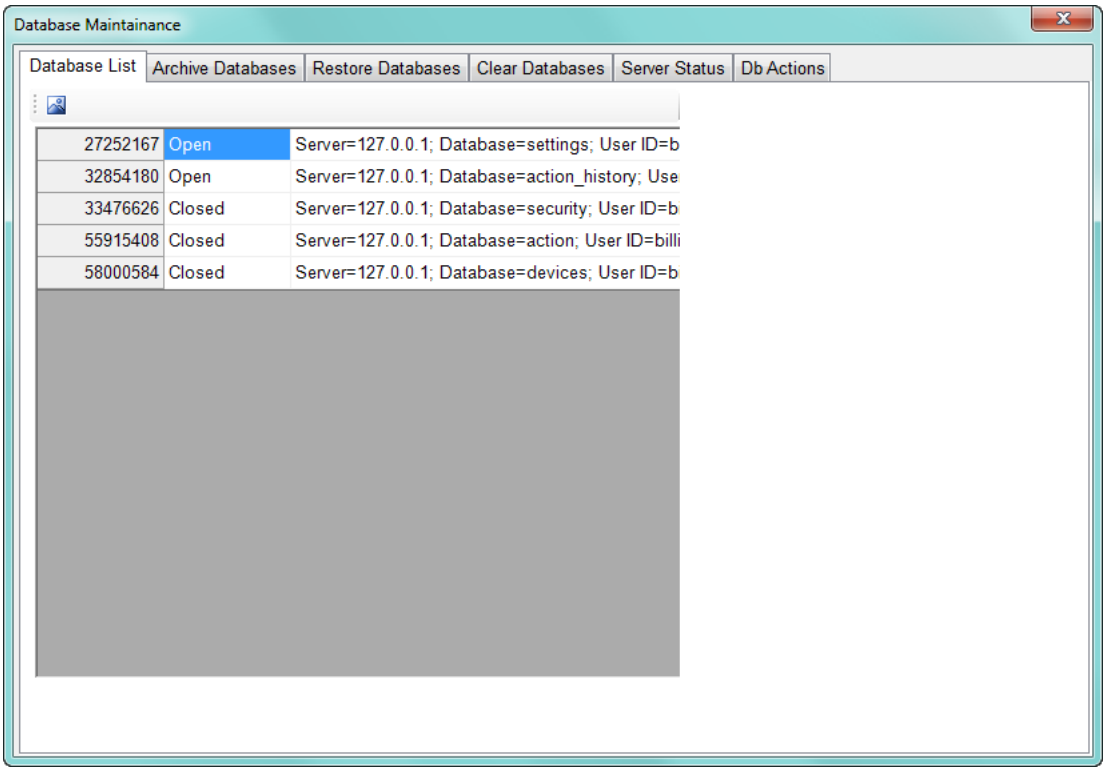

Database Maintainance
Database List
Archive Databases
Restore Databases
Clear Databases
Server Status
Db Actions
27252167 Open Server=127.0.0.1; Database=settings; User ID=b
32854180 Open Server=127.0.0.1; Database=action_history; Use
33476626 Closed Server=127.0.0.1; Database=security; User ID=b
55915408 Closed
58000584 Closed
Warning! Many of the tools on the page can change or even destroy data stored on the database server. Are you sure you want to continue?
Continue
Exit

2. Click Continue to access the database options, explained in the next sections.

7.2.1: Database List

To view existing databases:

1. From the Database Maintenance List, click the Database List tab (this is the first tab displayed when the Database Maintenance screen opens, so you may not need to click the tab to see it).



2. This screen displays the status (Open or Closed) of the databases and information about them.

7.2.2: Archive Database Clusters

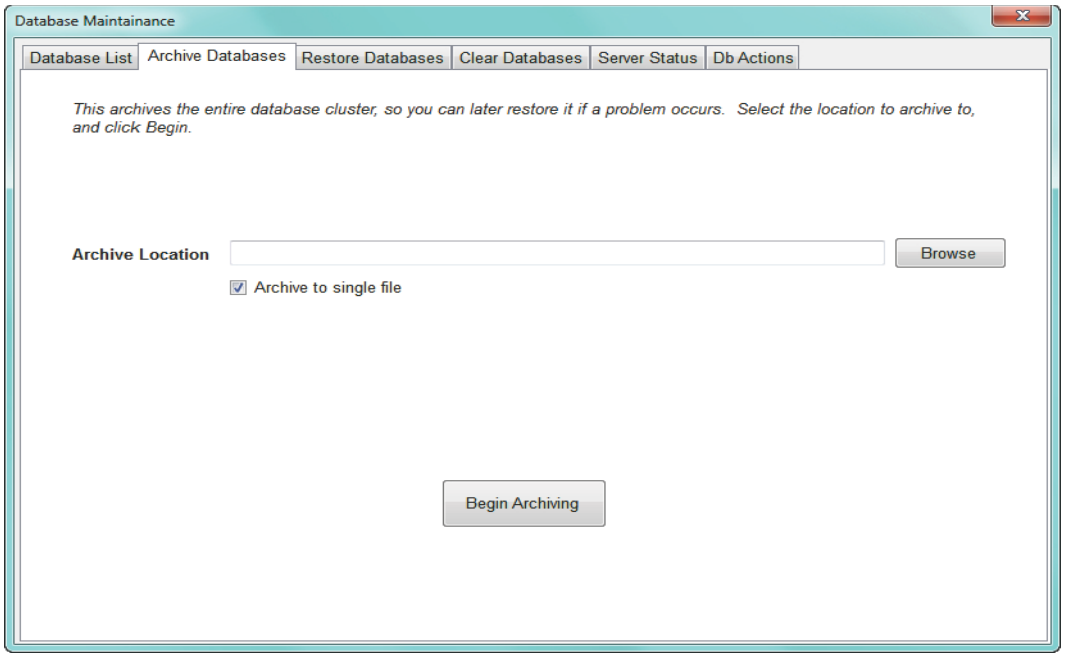
To ensure that your data is backed up, or if you want to migrate the database server from one computer to another, you can archive your database cluster. This creates a local copy of the data, which can later be uploaded to a server to restore the database to the saved condition.

NOTE: This function copies **all** of the data on the database server. Using this to restore to a server will **overwrite all** data.

WARNINGS!

- A database archive can be extremely large. For example, a database with hundreds of meters, with data accrued for a few years, can be at least 20GB in size. Make sure you have the room to store the archive.
- Only the data stored on the server is saved. The server's settings and configuration must be manually re-configured when the data is restored.

1. From the Database Maintenance screen, click the Archive Databases tab.

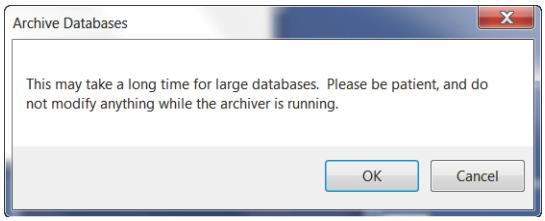

Database Maintainance
Database List
Archive Databases
Restore Databases
Clear Databases
Server Status
Db Actions
This archives the entire database cluster, so you can later restore it if a problem occurs. Select the location to archive to, and click Begin.
Archive Location
Browse
Archive to single file
Begin Archiving

2. Click the Browse button to choose the location you want to save the archive to.

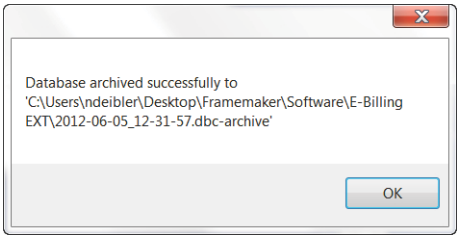
3. To save the database to a single file, leave the checkbox selected. This option makes it easier to store and transfer the archive, but may cause problems for older operating systems.

WARNING! You should disconnect the database so that no one else can modify it while you are performing the archive. Otherwise the archive may be corrupted.

4. Click the Begin Archive button. You will see the message window shown on the right. Click OK to continue.
   Once you begin archiving the database, the process won't stop until the entire database has been archived. As the message says, this can take a very long time, so be patient.


Archive Databases
This may take a long time for large databases. Please be patient, and do not modify anything while the archiver is running.
OK
Cancel

5. You will see a progress screen while the database is being archived, and a message window once the archiving is successfully completed. See the screen below.



   Click OK to close the message window.

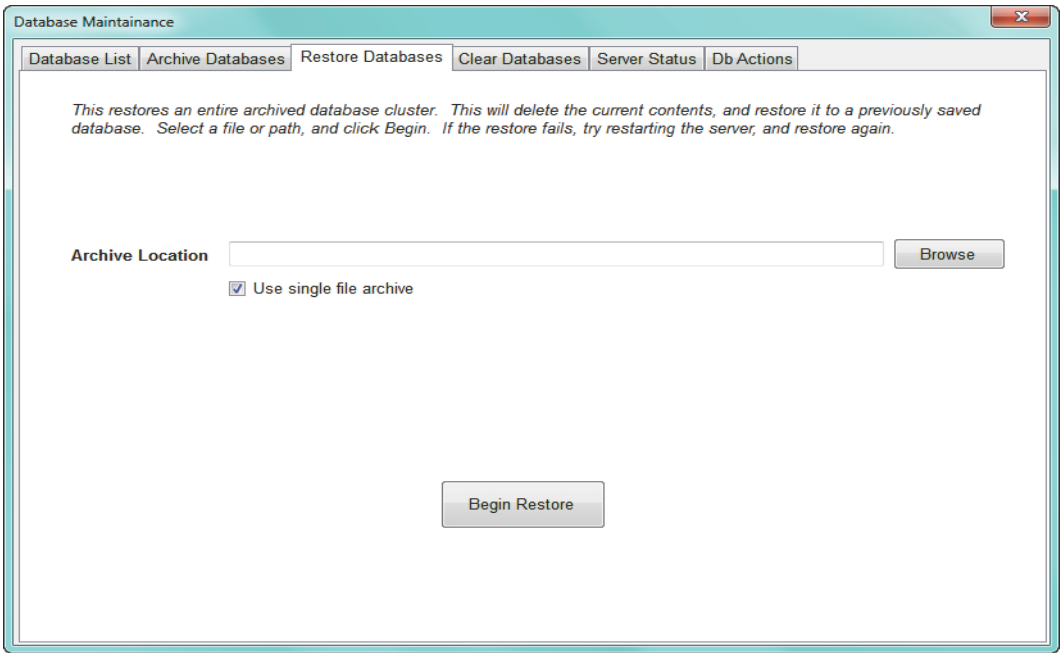
7.2.3: Restore Database Clusters

If you ever need to recover from a corrupted database, or if you want to move your database server to another location, you can restore a database cluster from an archive created with the Archive Database tool.

WARNING! Restoring a database archive **overwrites all** the data in the database cluster. Any data already there will be lost.

NOTE: Only the data stored in the database is restored. Any server configurations or back-end changes must be re-configured manually.

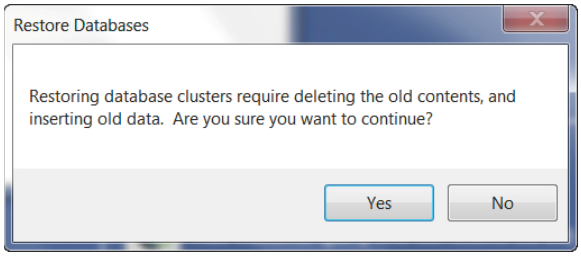
1. From the Database Maintenance screen, click the Restore Databases tab.


Database Maintainance
Database List
Archive Databases
Restore Databases
Clear Databases
Server Status
Db Actions
This restores an entire archived database cluster. This will delete the current contents, and restore it to a previously saved database. Select a file or path, and click Begin. If the restore fails, try restarting the server, and restore again.
Archive Location
Browse
Use single file archive
Begin Restore

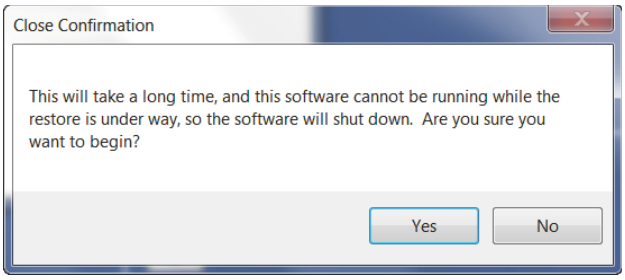
2. Click Browse to locate the database archive you want to restore.

3. If the archive was stored in a single file, leave the checkbox selected. If it was stored in multiple files, uncheck the box.

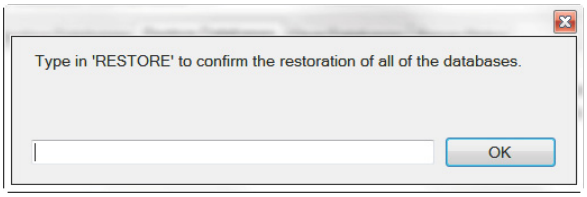
4. Click Begin Restore to restore the database. You will see the message window shown on the right.


Restore Databases
Restoring database clusters require deleting the old contents, and inserting old data. Are you sure you want to continue?
Yes
No

5. Click Yes to continue. You will see the message window shown on the right.


Close Confirmation
This will take a long time, and this software cannot be running while the restore is under way, so the software will shut down. Are you sure you want to begin?
Yes
No

6. Click Yes to continue. You will see the message window shown on the right. Key RESTORE in the blank field and click OK.



7. While the database is being restored you will see a screen showing the progress.

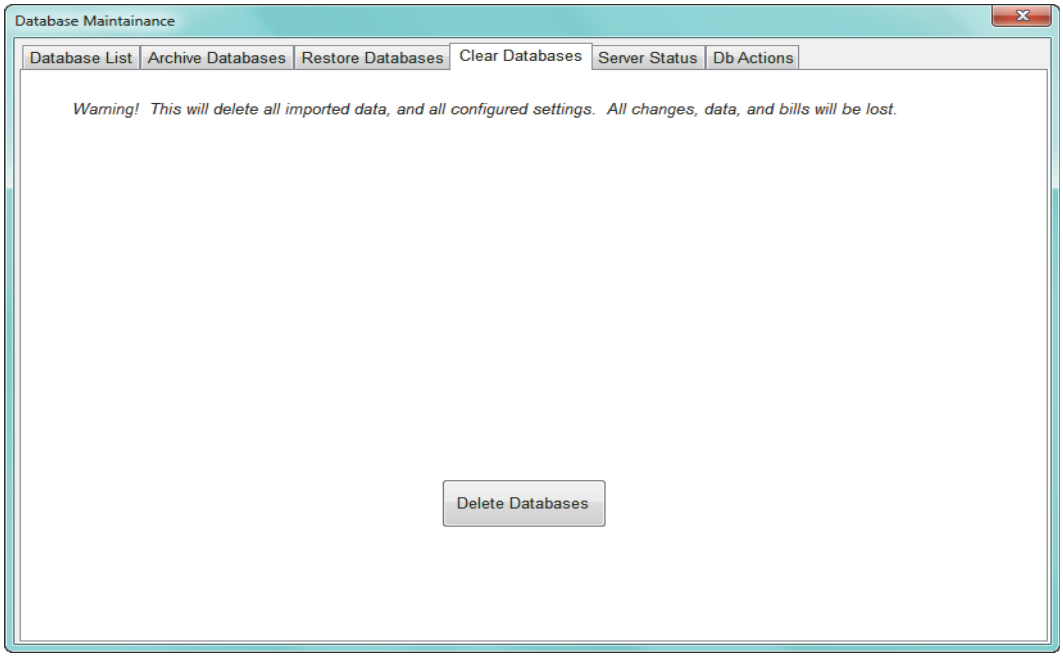
   If there is a large amount of data, this process may take a long time to complete, e.g., it will take hours to restore a 20 Gigabyte database archive. When the restore is done, the window closes. You can now re-open the EnergyReporter EXT application.

7.2.4: Clear Database

You can clear a database with this procedure.

WARNING! Make **very sure** that you want to delete all of the data in the database before you click Delete Databases. This command deletes **all** imported data and **all** configured settings, including all bills and any changes you have made to data.

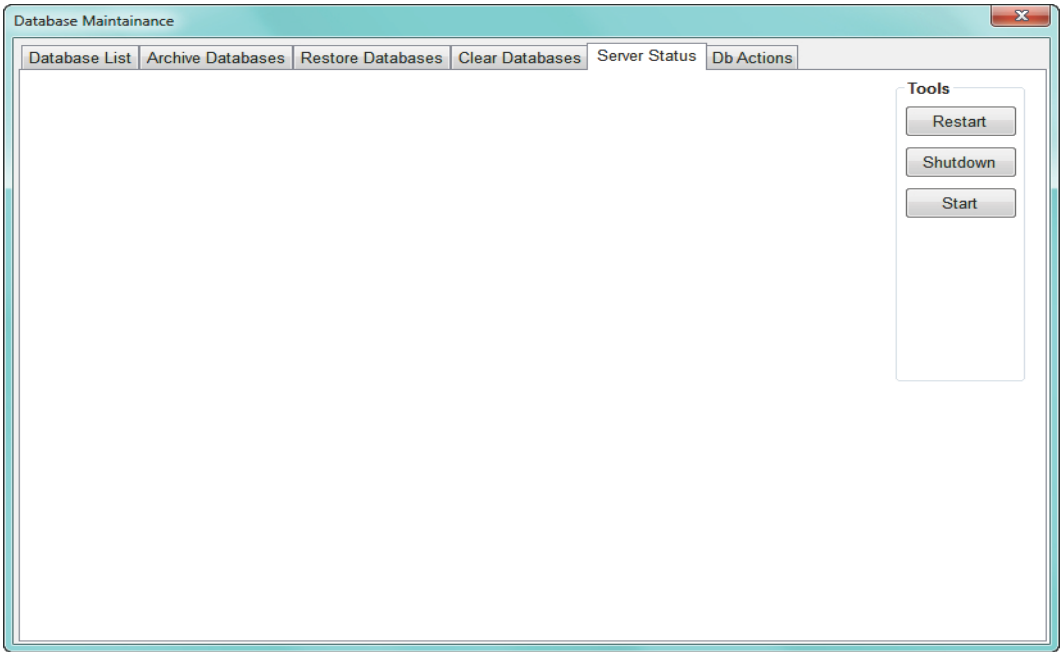
1. From the Database Maintenance screen, click the Clear Databases tab.



2. Click the Delete Databases button.

7.2.5: Server Status

1. From the Database Maintenance screen, click the Server Status tab.



2. You have three options:

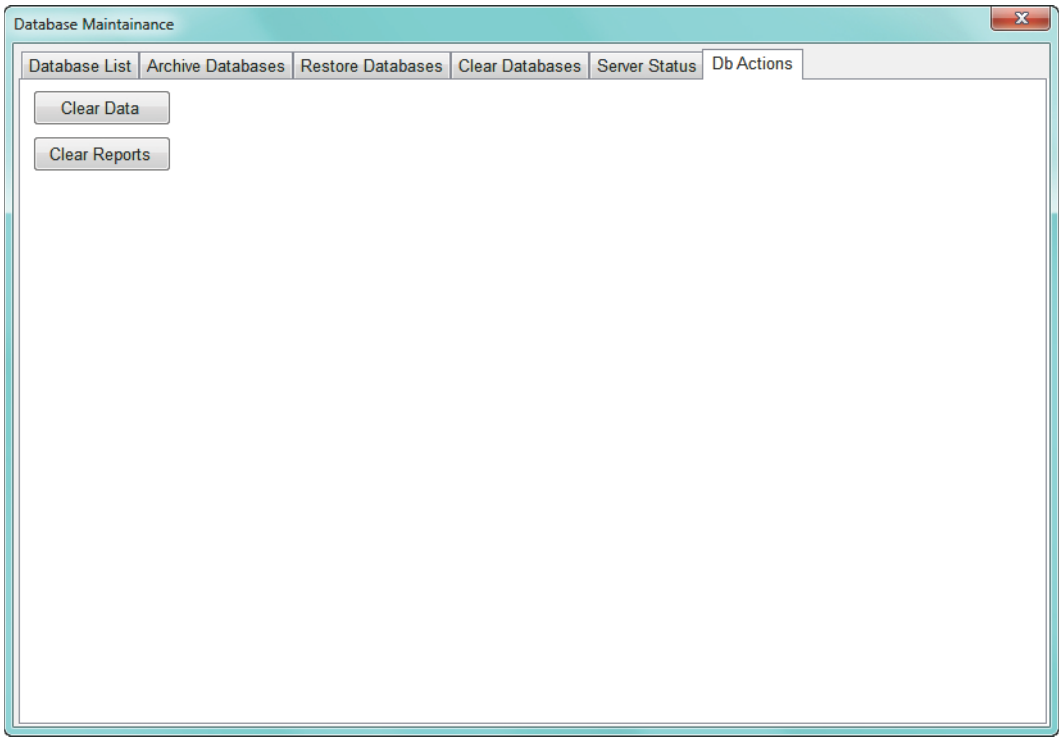
- Restart: click this button to start the local database server after it has been shut down.

- Shutdown: click this button to close the local database server. You see a window that shows the progress of stopping the server, and then a window telling you that the software must be shutdown to finish stopping the server. Click OK to proceed with the shutdown.
  NOTE: The local database server does not close when you exit the EnergyReporter EXT application. You must use this command if you want to close it.

- Start: click this button to start the main Database server (not the local database server) if it is not opening correctly (it should open when the software starts).

7.2.6: DB Actions

1. From the Database Maintenance screen, click the DB Actions tab.



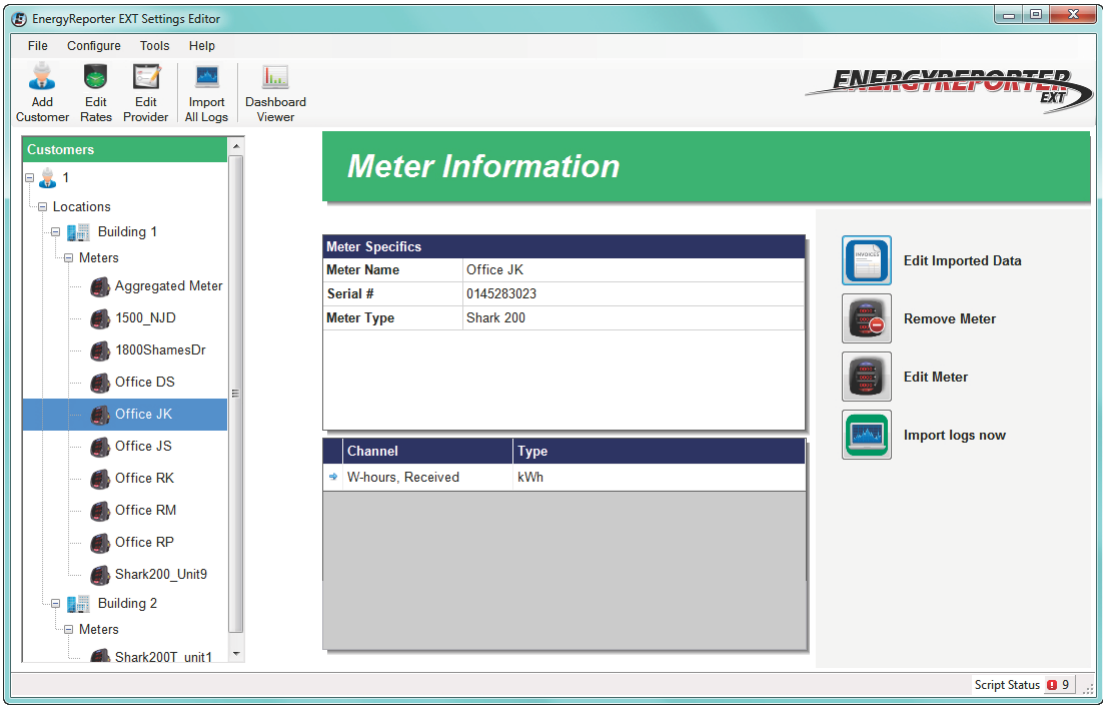
2. You have two options:

   - Clear Data: click this button to clear all meter data.
   - Clear Reports: click this option to clear all report data.

7.3: Clear Meter Data

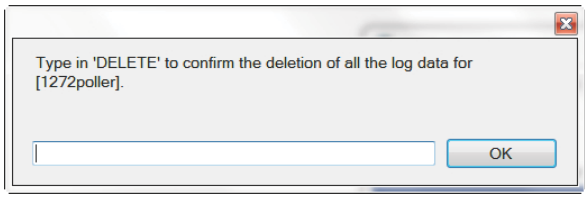
The EnergyReporter Settings Editor gives you the option to clear meter data. You may want to do this if you imported the incorrect data or corrupted data and want to remove it.

1. From the EnergyReporter Settings Editor Location screen, highlight the meter whose data you want to clear. See the example screen below.



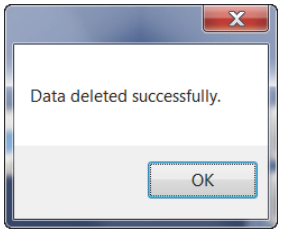
2. From the Menu bar, click Tools>Database Maintenance>Clear Meter Data.

3. You will see a window that prompts you to enter DELETE. See the example screen on the right.
   Type DELETE in the entry field and click OK to delete the meter data.



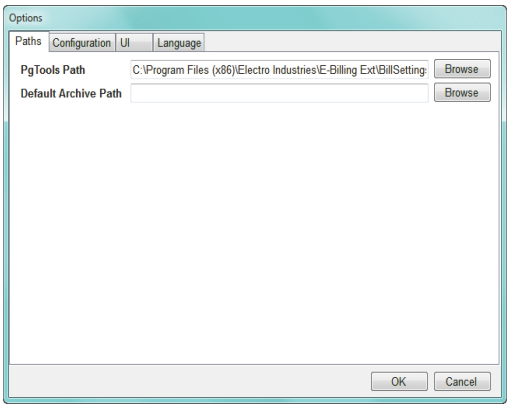
4. You will see the message window on the right.

   Click OK to close the message window.

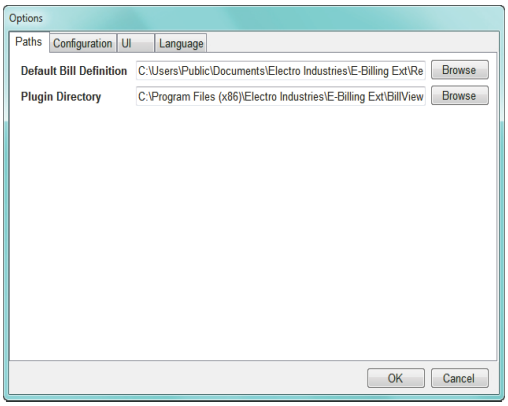


7.4: Option Screens

Both the EnergyReporter Settings Editor and EnergyReporter Dashboard Viewer have an Options screen. You access this screen by clicking Tools>Options from the main screen's Menu bar. The screen has four tabs for settings: Paths, Configuration, UI, and Language. The settings are the same on both screens, except for the Paths settings. See the screens below.



EnergyReporter Settings Editor Options Screen



EnergyReporter Dashboard Viewer Options Screen

7.4.1: Path Setting

EnergyReporter Dashboard Viewer setting:

- Default Bill Definition: this is the template for the bills. Click Browse to set up another location.

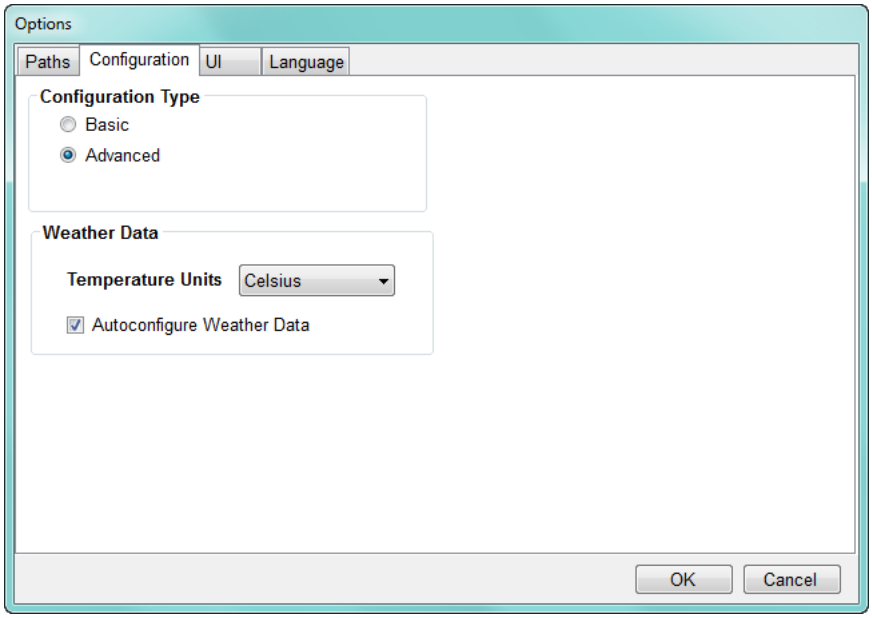
EnergyReporter Settings Editor settings:

- Pg Tools Path: this is the path to the pg_tools exe, which is a utility used to archive, restore, and perform other maintenance operations on the database cluster. Click Browse to set up another location.
- Default Archive Path: this is the default location where the archive is stored when the database cluster is archived. Click Browse to select the location.

7.4.2: Configuration Setting

The settings are similar for the EnergyReporter Dashboard Viewer and the EnergyReporter Settings Editor. This setting controls what options are available to the user.

1. Click the Configuration tab. You will see the screen shown below from the EnergyReporter Settings Editor. The Options screen from the EnergyReporter Dashboard Viewer does not have the Autoconfigure Weather Data checkbox.



2. Click the radio button of the option you want to set:

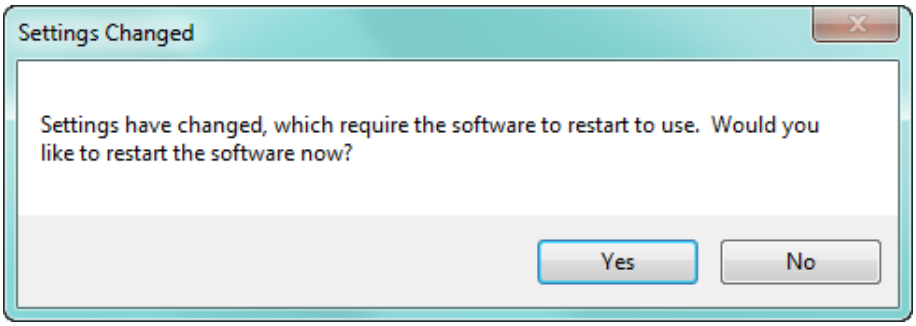
   - Basic restricts access to functional billing tasks and provides a user friendly interface to configure settings.

   - Advanced provides access to all options, and should only be chosen for advanced users.

3. The Weather Data section lets you select Celsius or Fahrenheit from the pull-down menu.

4. The default Weather Data configuration is Auto-Configure. If you do not wish to automatically configure settings for weather data acquisition for new locations at the time they are first created, click on the Autoconfigure Weather Data button to disable this feature.

5. If you've made a change, when you click OK you will see this window.


Settings Changed
Settings have changed, which require the software to restart to use. Would you like to restart the software now?
Yes
No

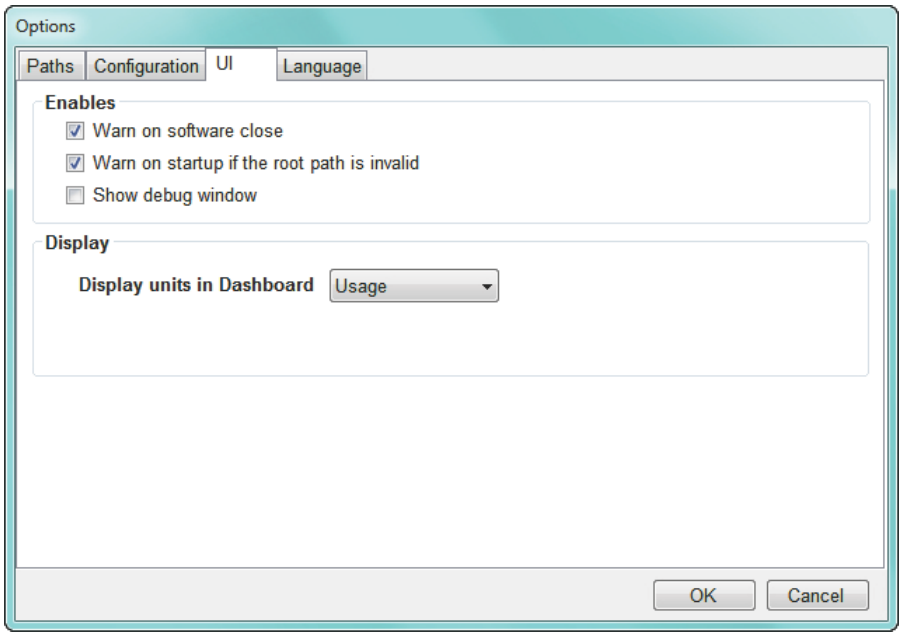
6. Click Yes to restart the EnergyReporter EXT software now; click No if you don't want to restart the software.

   NOTE: Changes you make won't take effect until you restart the software.

7.4.3: UI (User Interface) Setting

Except for one setting, the EnergyReporter Dashboard Viewer and EnergyReporter Settings Editor Option screens have the same UI settings.

1. Click the UI tab. The screen shown below is from the EnergyReporter Dashboard Viewer. The Options screen from the EnergyReporter Settings Editor does not have Display option.



2. These are the setting options:

   - Warn on software close: this setting asks the user to confirm closing the software. The default of the setting is checked - selected. To un-select the setting click on the checkbox to remove the checkmark.

   - Warn on startup if the root path is invalid: this setting verifies that the database server has been configured correctly and is accessible. The default of the setting is checked - selected. To un-select the setting click on the checkbox to remove the checkmark (this is not recommended).

   - Show debug window: click the checkbox to show the debug trace window while the software is running.

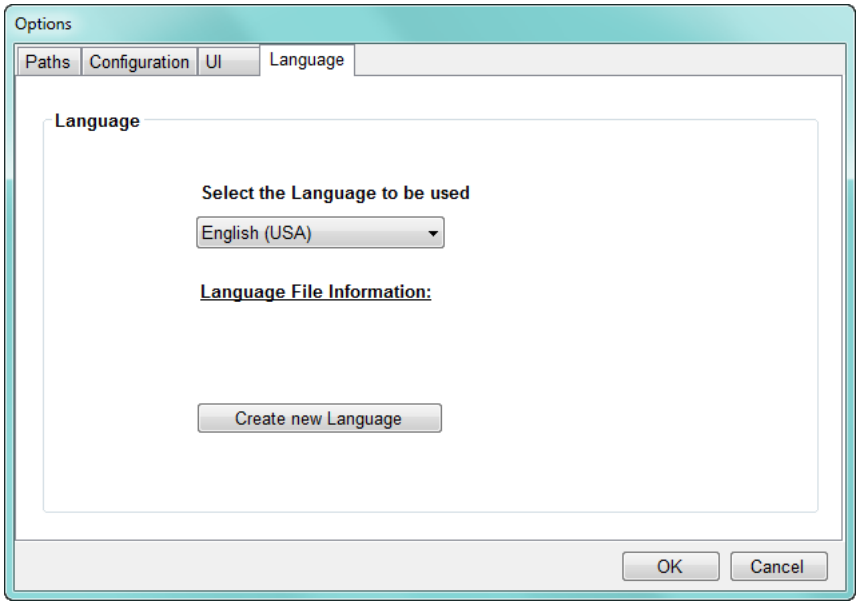
   - Display units in Dashboard - select either Usage or Demand.

3. Click OK to close the screen and apply your settings.

7.4.4: Language

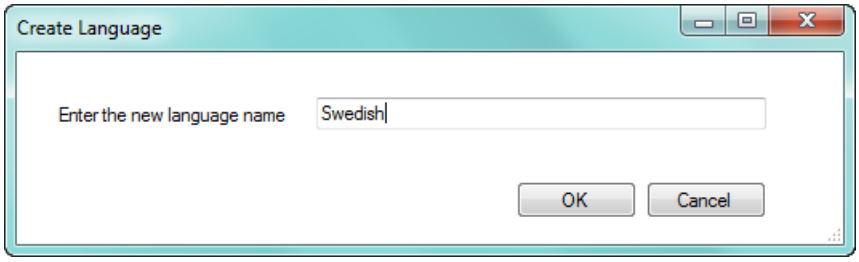
This feature allows you to select a translation of the software to use, as well as providing a tool that can be used to translate the software.

1. Click the Language tab from the EnergyReporter Settings Editor or Dashboard Viewer Options screen.

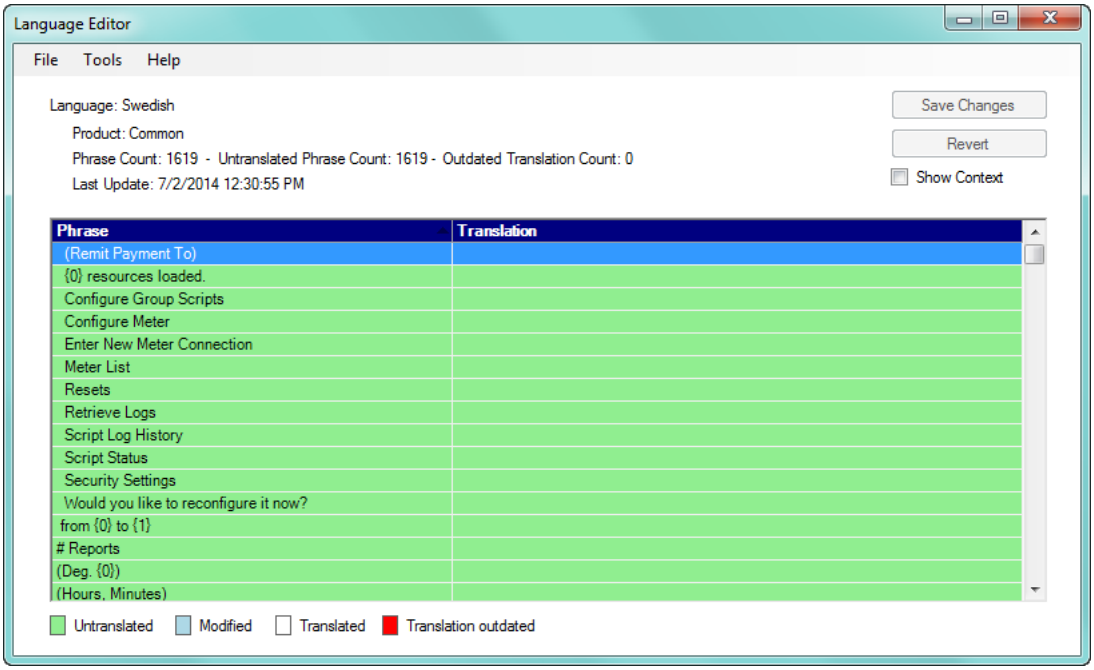


2. Select from the available languages from the pull-down menu. You can click Language File Information for details of the selected Language file.

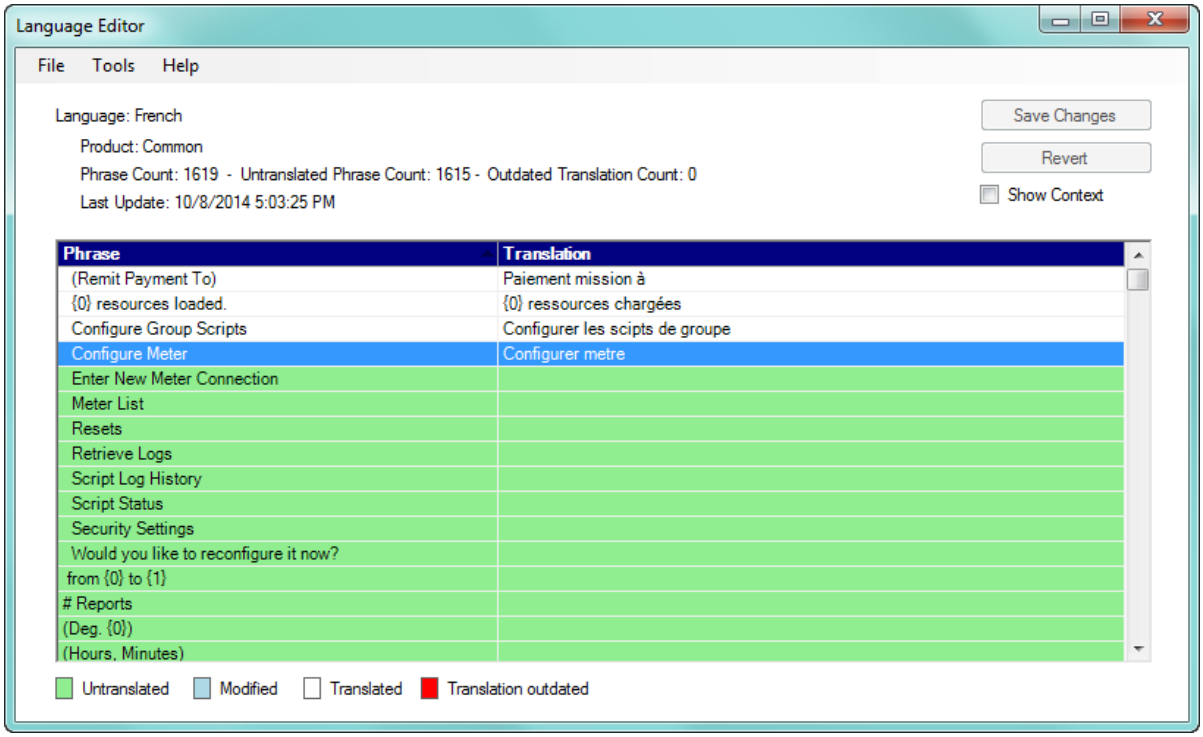
3. To add a new translation, click the Create New Language button.



4. Enter the language name and click OK.

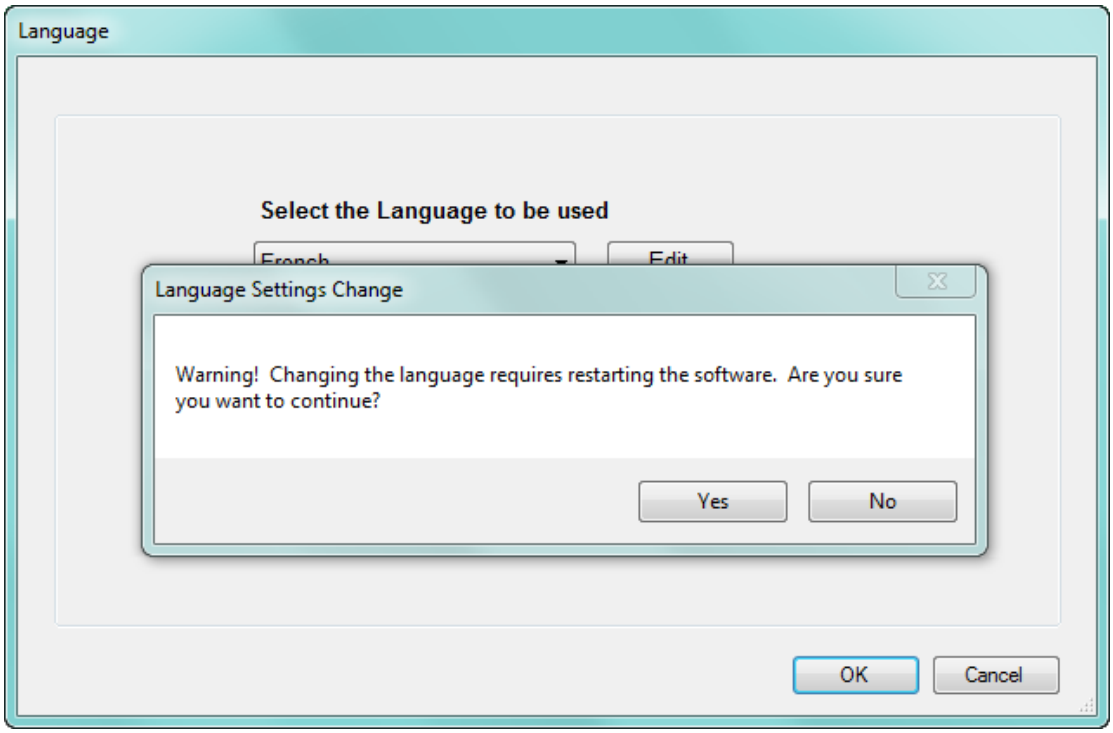


5. Use the screen shown above to enter the translations. You enter the translation in the Translation column for each term in the Phrase column. See the example screen on the next page.



6. When you have finished entering the translations, click Save Changes to save the language file.

7. The Language screen is redisplayed. Select the language you want to use from the pull-down menu and click OK. You will see the following confirmation window.



8. Click Yes. The software will shut down. Open it again to display the translated application.

7.5: Performing Tasks Using Command Line

You can trigger an import of all meters or generate all bills from command line. This feature is used if you wish to launch the EnergyReporter EXT application from a third party application and have it run tasks. Using the command line, the EnergyReporter EXT application can be embedded, as a launch command, into any third party application.

7.5.1: Import Data Using Command Line

This can be useful for automating the importing of data. The command you use is as follows:

"[Path]\BillSettingsEditor.Master.exe" --script --import meter=all

IMPORTANT!

- [Path] is the path to the application on your PC.
- You must include the quotation marks.
  For example:
  "C:\Program Files (x86)\Electro Industries\EnergyReporter EXT\BillSettingsEditor\BillSettings Editor.Master.exe" --script --import meter=all

7.5.2: Generate All Bills Using Command Line

This can be useful for automating the generation of bills. Make sure this runs after all the data for the month has been imported. The command you use is as follows:

"[Path]\BillViewer\BillViewer.exe" --script --generate_bill

IMPORTANT!

- [Path] is the path to the application on your PC.
- You must include the quotation marks.
  For example:
  "C:\Program Files (x86)\Electro Industries\EnergyReporter EXT\BillViewer\BillViewer.exe" --script --generate_bill

A: Sample Usage Summary Report

EIG- Engineering
August, 2014 - Usage Summary Report

Usage Summary Report for EIG- Engineering – August 2014

This report provides a summary of the kWh usage for EIG- Engineering from Friday, August 01, 2014 to Sunday, August 31, 2014. This report was generated on Tuesday, October 07, 2014.

Meter Report

Each meter report contains 6 sub-reports:

1. Month Usage
   Summarizes the usage of the meter over the course of August 2014, from 08/01/2014 00:00:00 to 08/31/2014 23:59:00. All values presented are the computed 15 minute interval values of the recorded commodity (kWh), summed over the specified interval. 4 values are presented:
   a. Total Usage – The sum of all the 15 minute interval values over the period of the report.
   b. Peak Usage – The peak 15 minute interval value over the period of the report.
   c. Month Usage – A graph of the summed usage of each day during the period of the report.
   d. Month Trend – A trend graph of the 15 minute interval values during the period of the report.
2. Peak Week Usage
   Summarizes the usage of the meter over the course of the peak week during August 2014. The peak week is defined as the week containing the peak day. All values presented are the computed 15 minute interval values of the recorded commodity (kWh), summed over the specified interval. 4 values are presented:
   a. Total Usage – The sum of all the 15 minute interval values over the period of the peak week.
   b. Peak Usage – The peak 15 minute interval value over the period of the peak week.
   c. Usage over the Week – A graph of the summed usage of each day during the peak week.
   d. Trend over the Week – A trend graph of the 15 minute interval values during the peak week.
3. Peak Day Usage
   Summarizes the usage of the meter over the course of the peak day during August 2014. The peak day is defined as the day which has the highest total usage. All values presented are the computed 15 minute interval values of the recorded commodity (kWh), summed over the specified interval. 3 values are presented:
   a. Total Usage – The sum of all the 15 minute interval values during the peak day.
   b. Peak Usage – The peak 15 minute interval value during the peak day.
   c. Usage over the Day – A graph of the 15 minute interval values during the peak day.
4. Average Hourly and Daily Usage
   Displays the average usage over the course of the month, averaged by hour, and by weekday. The highest and lowest usage for each hour and weekday over the course of the month are determined, and displayed as the bounding lines in Red and Green.
5. Comparison to previous Month and Year
   Displays a comparison of daily usage between this month and last month, and this month this year and this month last year. The daily usage is lined up by week day for each month. The numbers at the bottom indicate what day in the month each bar represents: The top value is the current month, the bottom value the month being compared against.
6. Monthly Usage and Temperature
   Displays a comparison of monthly usage and temperature. The highest and lowest temperature for each day over the course of the month are determined, and displayed as the bounding lines in Red and Green.

Description of Report Data

EIG- Engineering
August, 2014 - Usage Summary Report

Monthly Usage Summary

Customer EIG- Engineering
Month Date 08/01/2014 to 08/31/2014
Commodity kWh

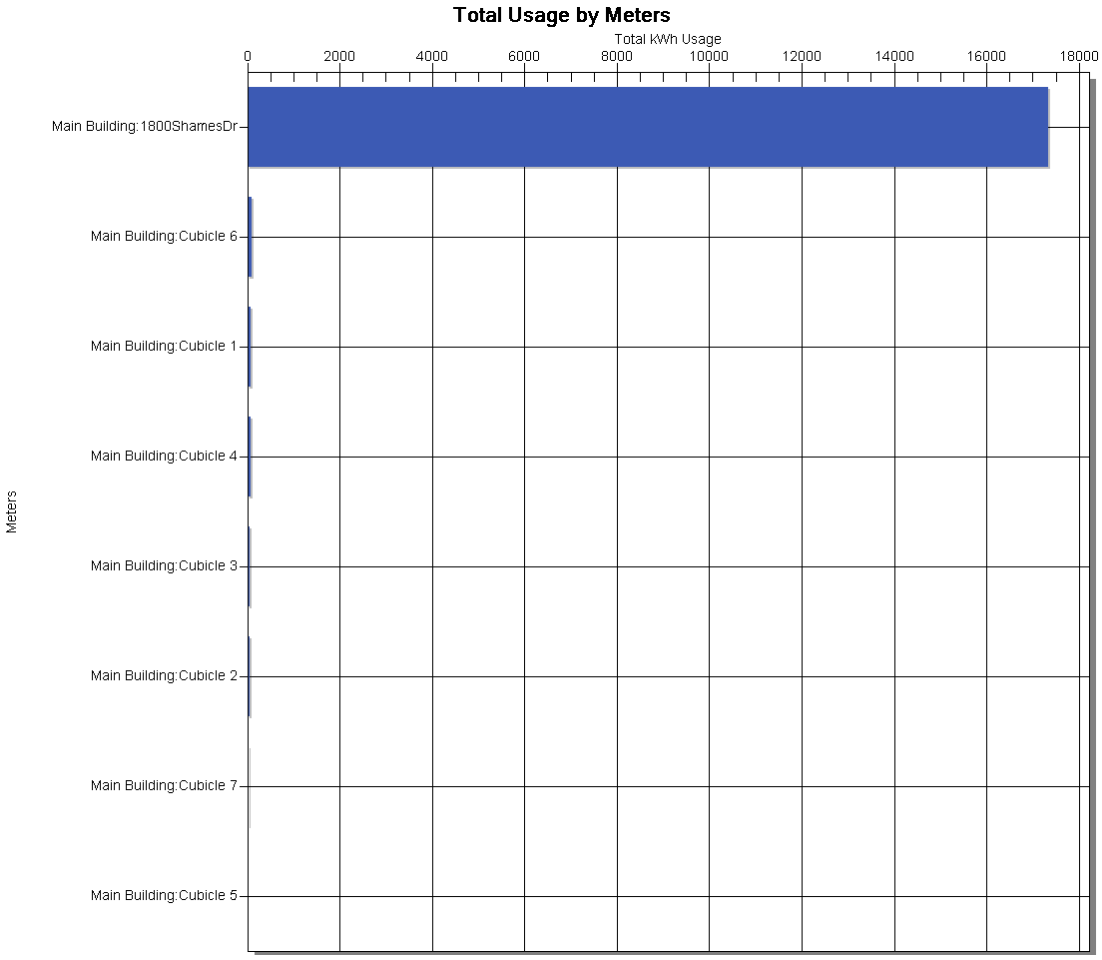
Figure	Meter Location	Meter Name	Meter Type	Meter Serial	Total Usage	Peak Usage	Peak Demand
1	Main Building	Aggregated Meter	Aggregated Meter		17731	14	57
2	Main Building	1800ShamesDr	Shark 200	0123995130	17345	14	56
3	Main Building	Cubicle 1	Shark 200	0145324120	71	0	0
4	Main Building	Cubicle 2	Shark 200	0126370221	50	0	0
5	Main Building	Cubicle 3	Shark 200	0145324019	55	0	0
6	Main Building	Cubicle 4	Shark 200	0145324423	69	0	0
7	Main Building	Cubicle 5	Shark 200	0145324524	9	0	0
8	Main Building	Cubicle 6	Shark 200	0145282931	98	0	1
9	Main Building	Cubicle 7	Shark 200	0145324221	35	0	0

Summary of monthly usage for the aggregated meter, the building, and all individual meters

EIG- Engineering
August, 2014 - Usage Summary Report

Highest Usage Meter Comparison

Customer	EIG- Engineering
Commodity	kWh
Highest Usage Meter	Main Building:1800ShamesDr @ 17345
Lowest Usage Meter	Main Building:Cubicle 5 @ 9
Top Usage Meters	



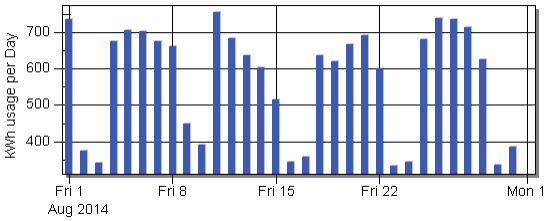
Highest usage comparison for the building and each meter

EIG- Engineering
August, 2014 - Usage Summary Report

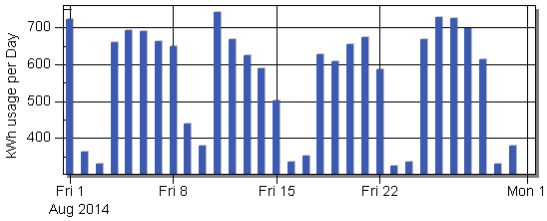
Monthly Usage at a Glance

Customer	EIG- Engineering
Month Date	08/01/2014 to 08/31/2014
Commodity	kWh

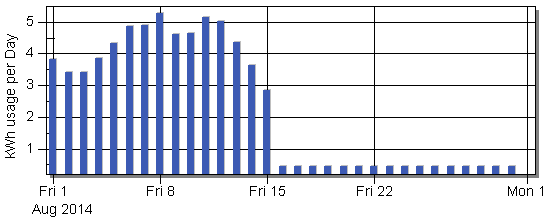
Main Building : Aggregated Meter 1



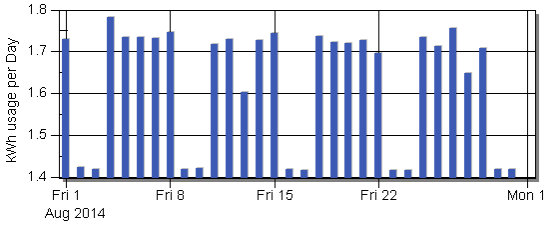
Main Building : 1800ShamesDr 2



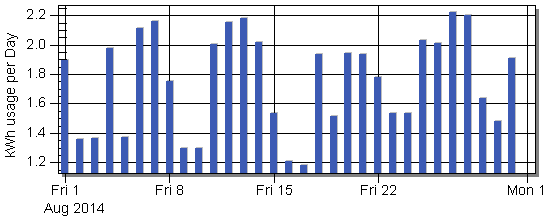
Main Building : Cubicle 1 3



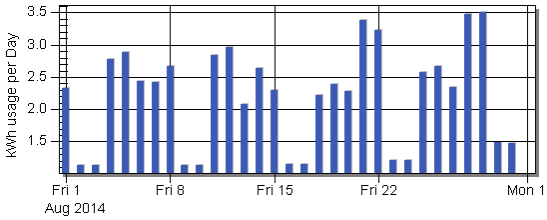
Main Building : Cubicle 2 4



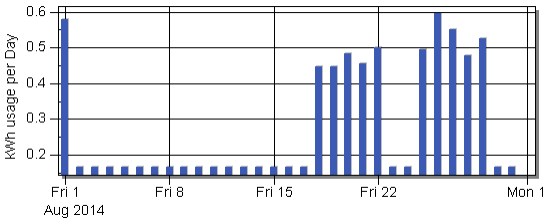
Main Building : Cubicle 3 5



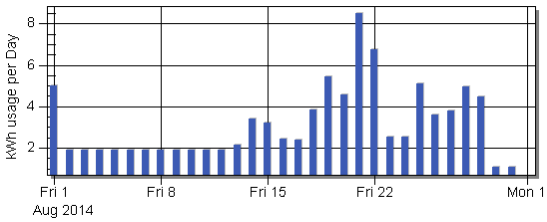
Main Building : Cubicle 4 6



Main Building : Cubicle 5 7



Main Building : Cubicle 6 8



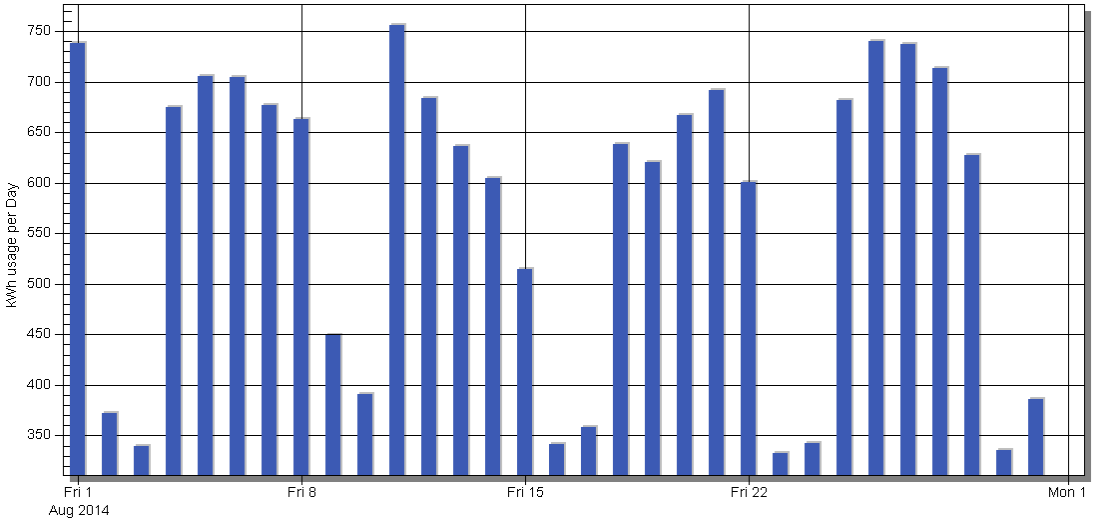
Monthly usage for the aggregated meter and all individual meters

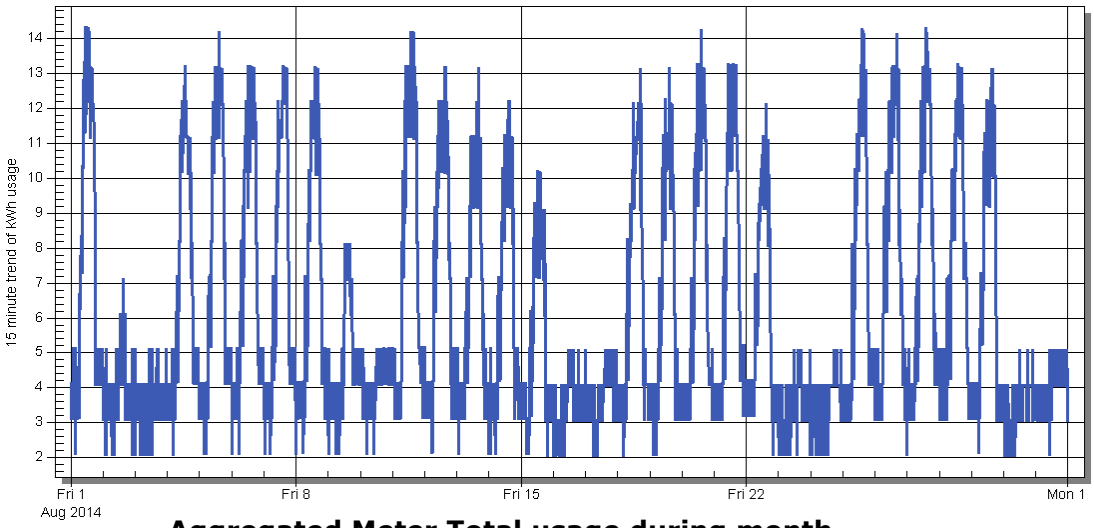
Main Building : Aggregated Meter

Total Usage during Month
08/01/2014 to 08/31/2014

Total Usage	17731
Peak Usage	14
Peak Demand	57

Figure 1.1





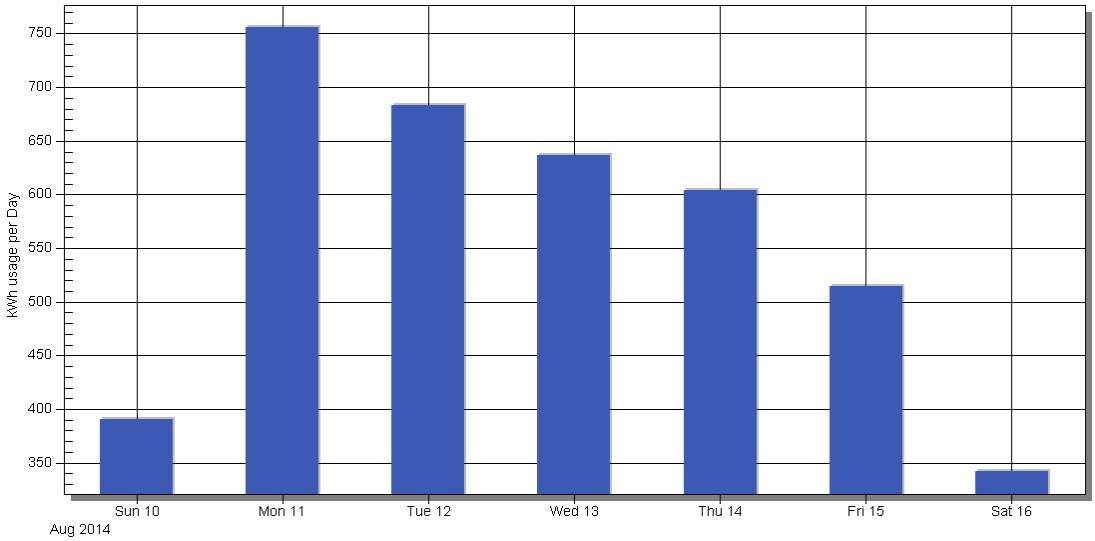
Aggregated Meter Total usage during month

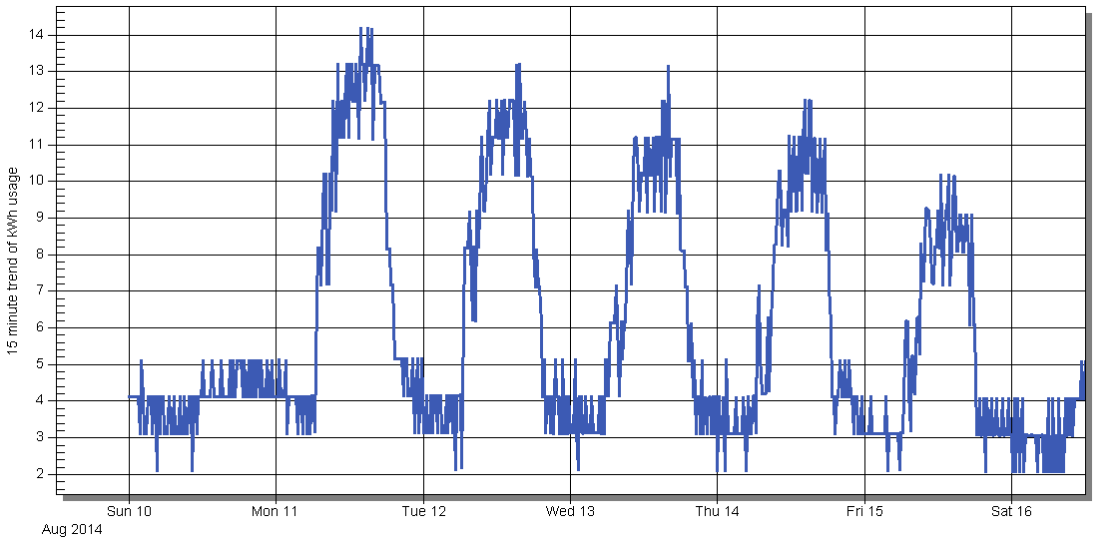
Main Building : Aggregated Meter

Total Usage during Peak Week
08/10/2014 to 08/16/2014

Total Usage	3929
Peak Usage	14

Figure 1.2





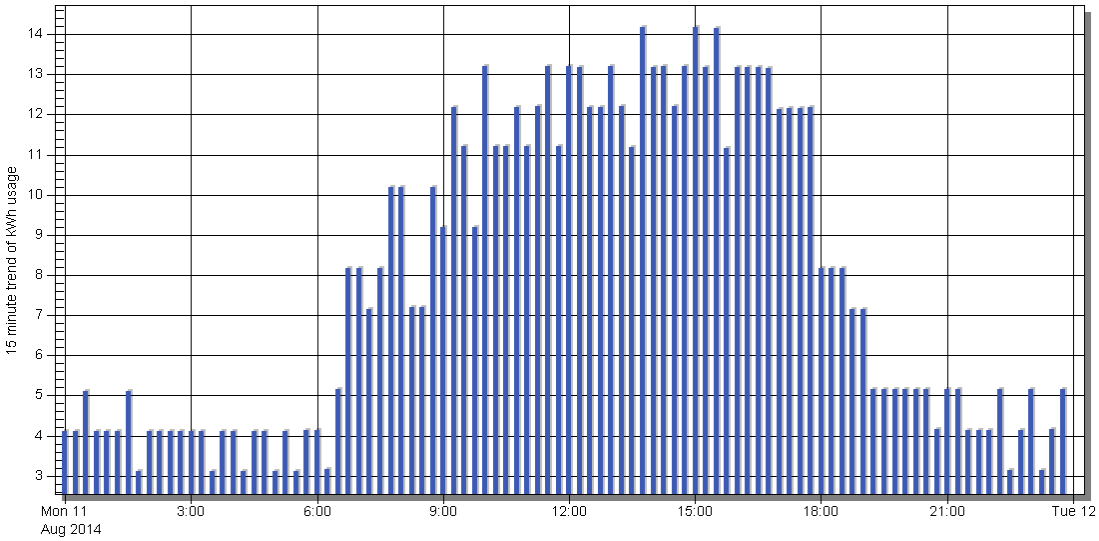
Aggregated Meter Total usage during Peak week

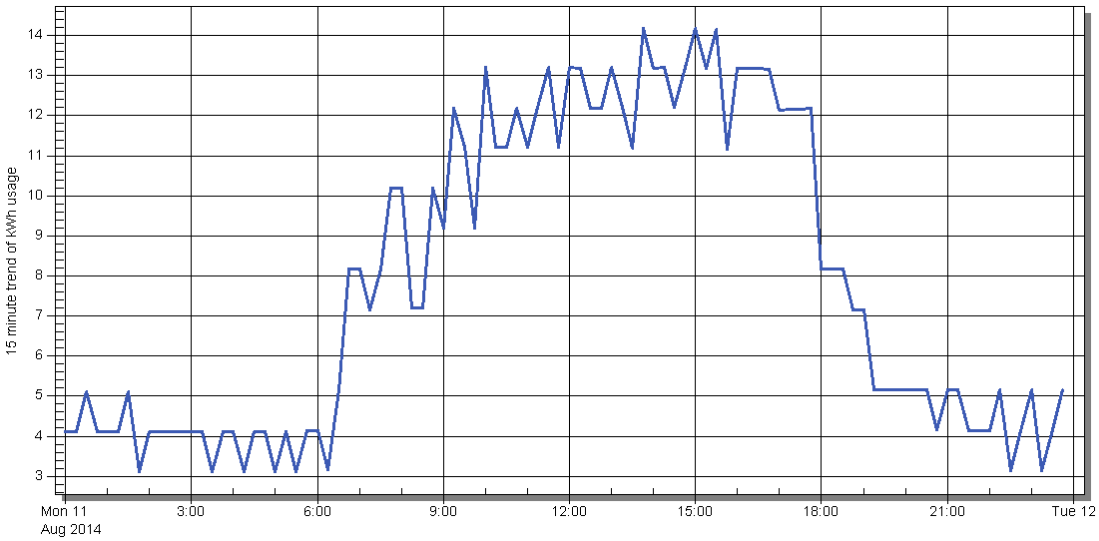
Main Building : Aggregated Meter

Total Usage during Peak Day
Monday, August 11, 2014

Total Usage	756
Peak Usage	14

Figure 1.3





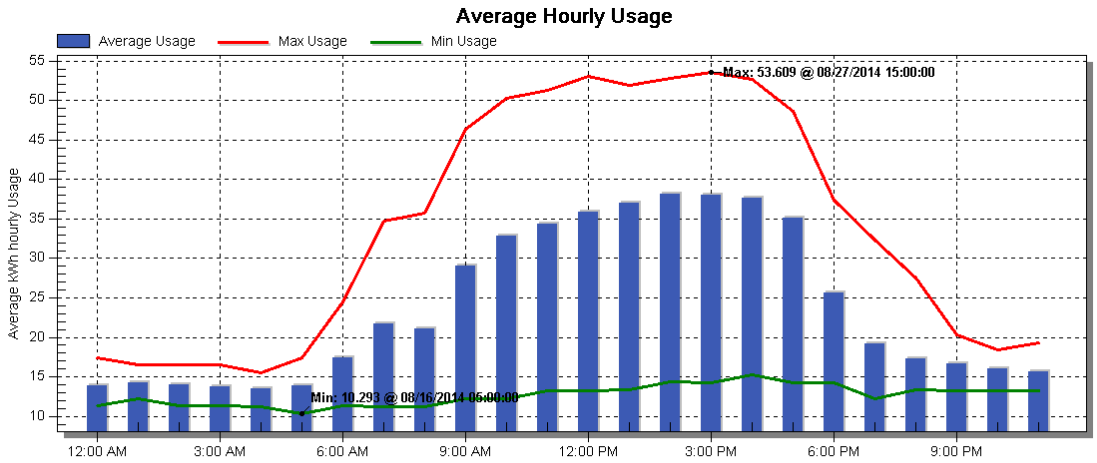
Aggregated Meter Total usage during Peak day

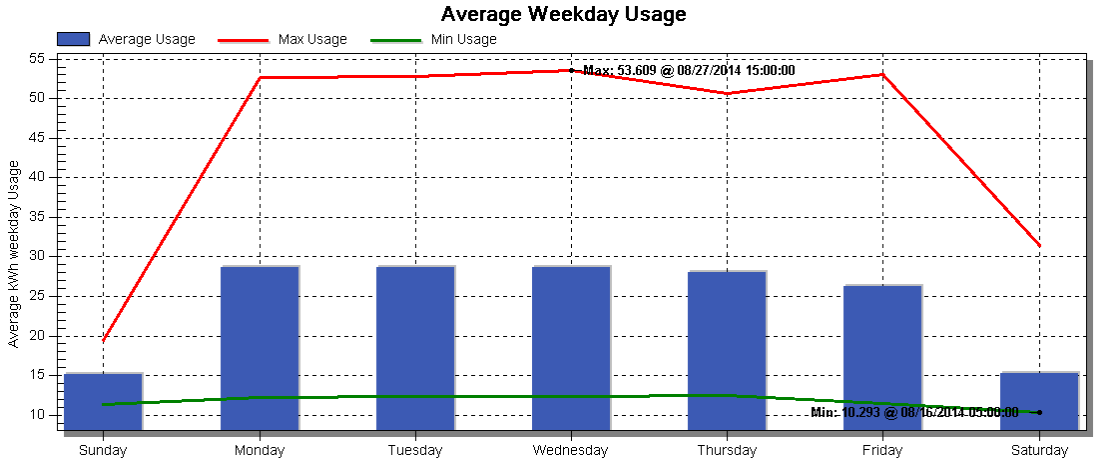
Main Building : Aggregated Meter

Average Hourly and Daily Usage

Displays the average usage over the course of the month, averaged by hour, and by weekday. The highest and lowest usage for each hour and weekday over the course of the month are determined, and displayed as the bounding lines in Red and Green.

Figure 1.4



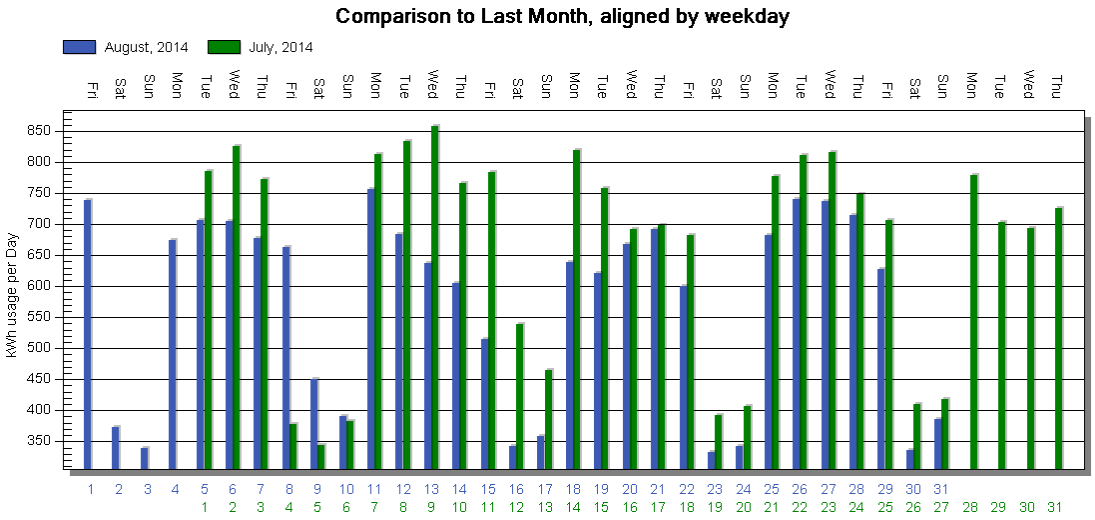


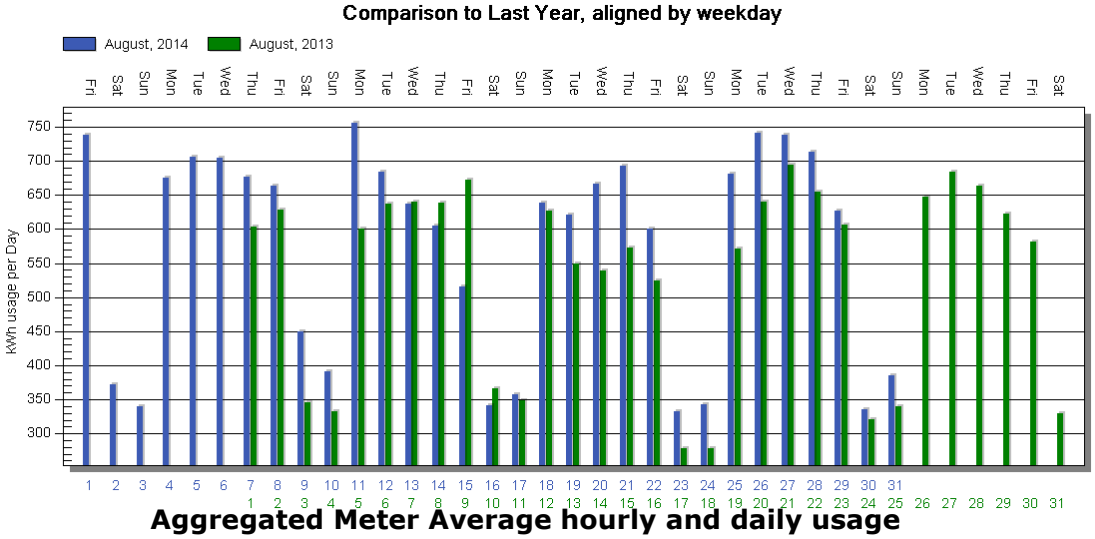
Main Building : Aggregated Meter

Comparison to previous Month and Year

Displays a comparison of daily usage between this month and last month, and this month this year and this month last year. The daily usage is lined up by week day for each month. The numbers at the bottom indicate what day in the month each bar represents: The top value is the current month, the bottom value the month being compared against.

Figure 1.5





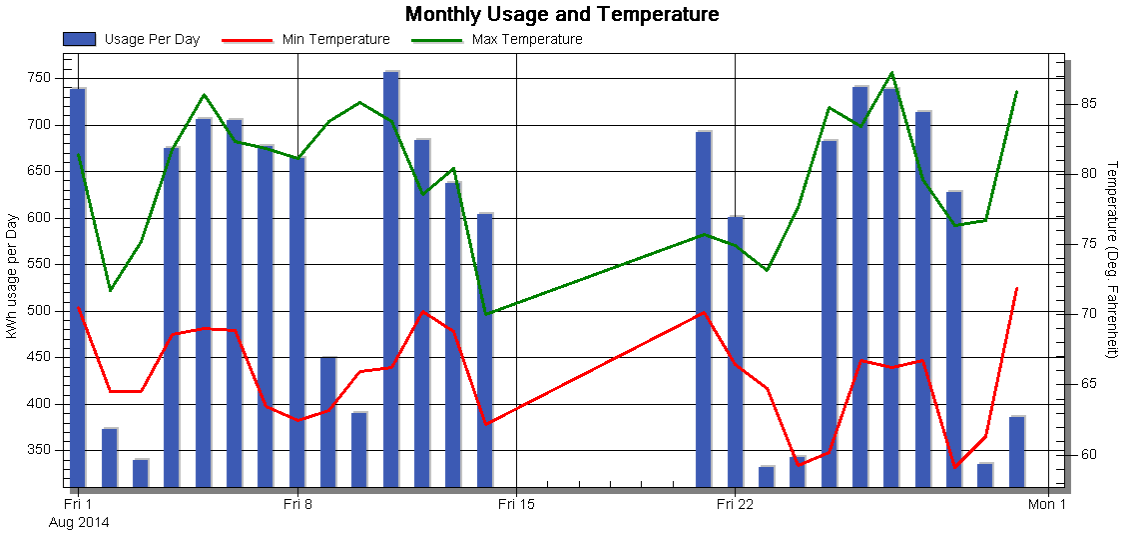
Aggregated Meter Average hourly and daily usage
Aggregated Meter Usage comparison to previous month and year

Main Building : Aggregated Meter

Monthly Usage and Temperature

Displays a comparison of monthly usage and temperature. The highest and lowest temperature for each day over the course of the month are determined, and displayed as the bounding lines in Red and Green.

Figure 1.6



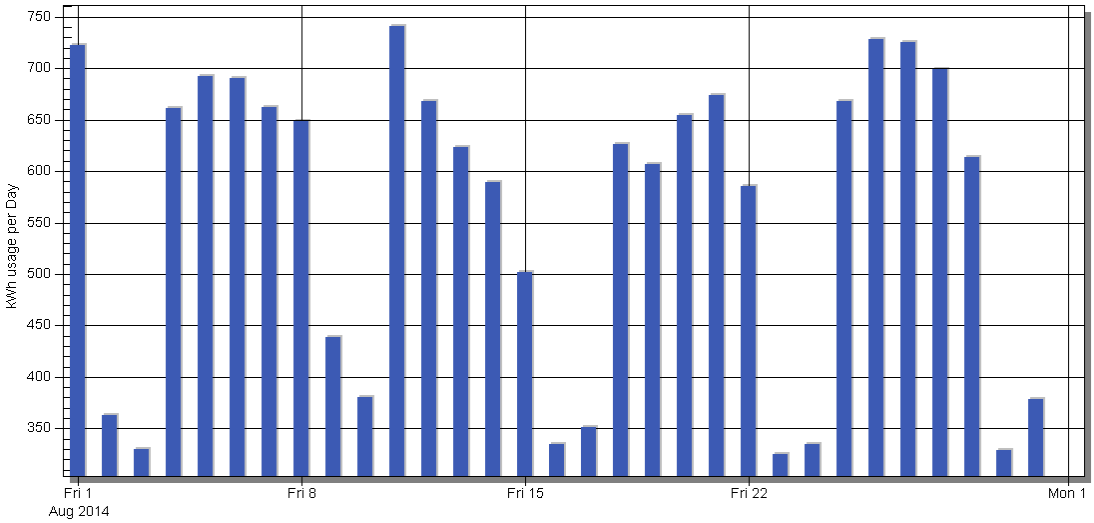
Aggregated Meter Monthly usage compared to temperature

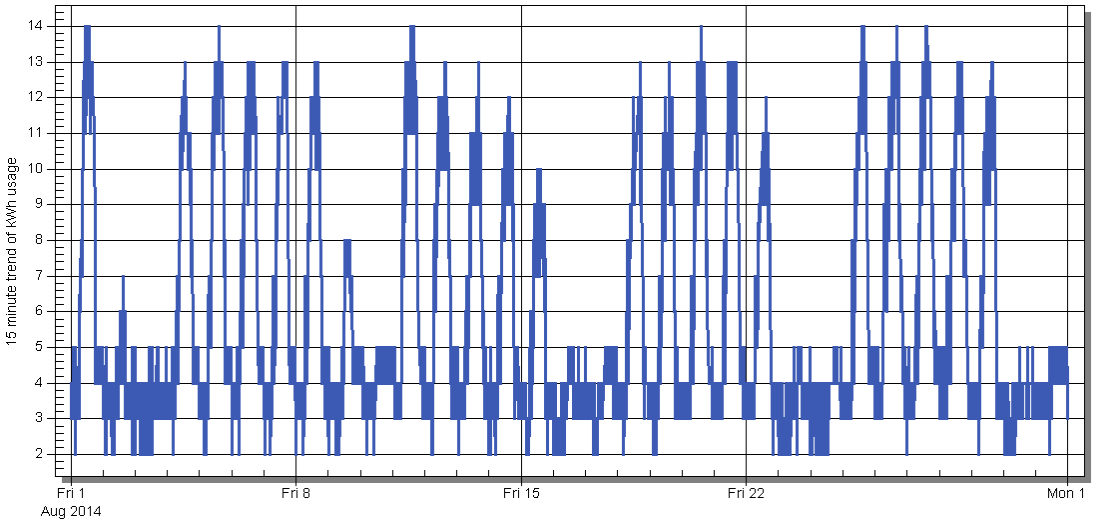
Main Building : 1800ShamesDr

Total Usage during Month
08/01/2014 to 08/31/2014

Total Usage	17345
Peak Usage	14
Peak Demand	56

Figure 2.1





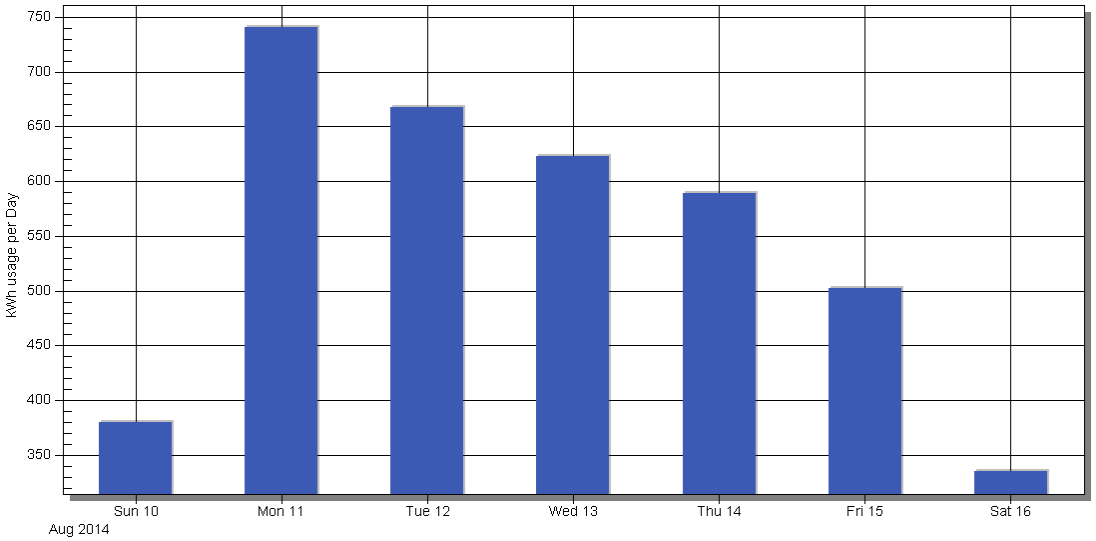
Main Building Total usage during month

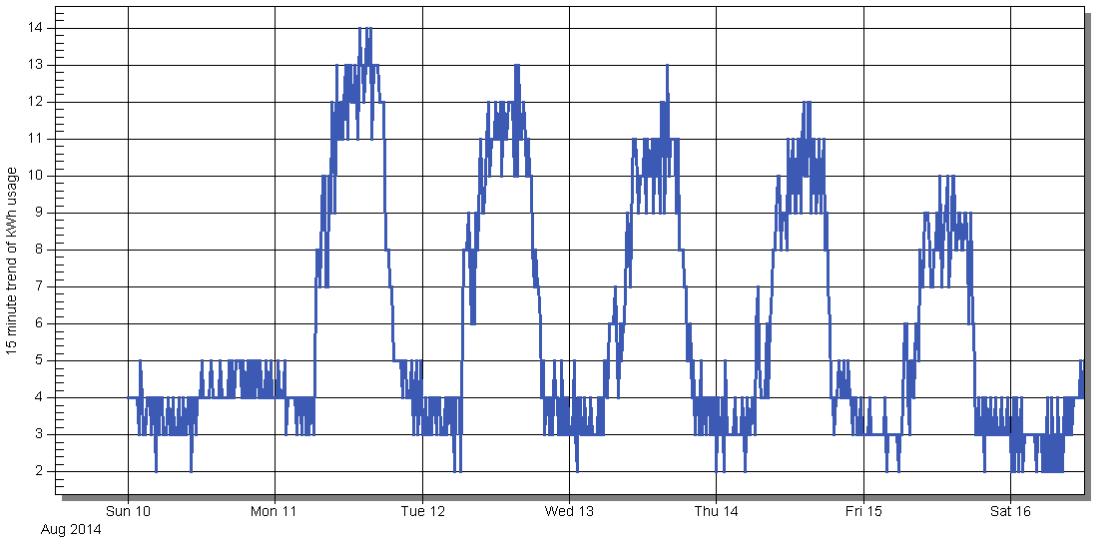
Main Building : 1800ShamesDr

Total Usage during Peak Week
08/10/2014 to 08/16/2014

Total Usage	3838
Peak Usage	14

Figure 2.2





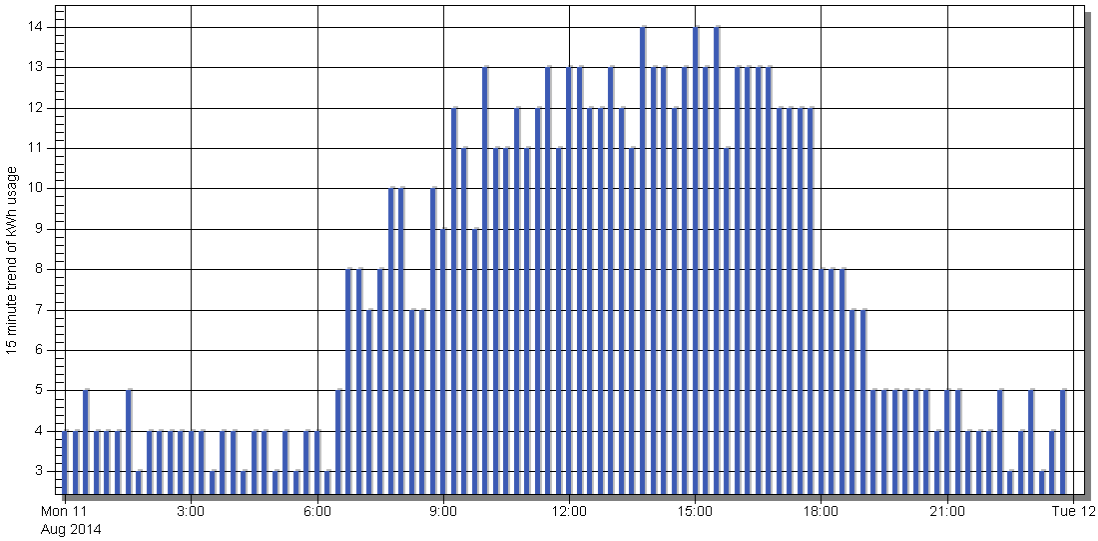
Main Building Total usage during Peak week

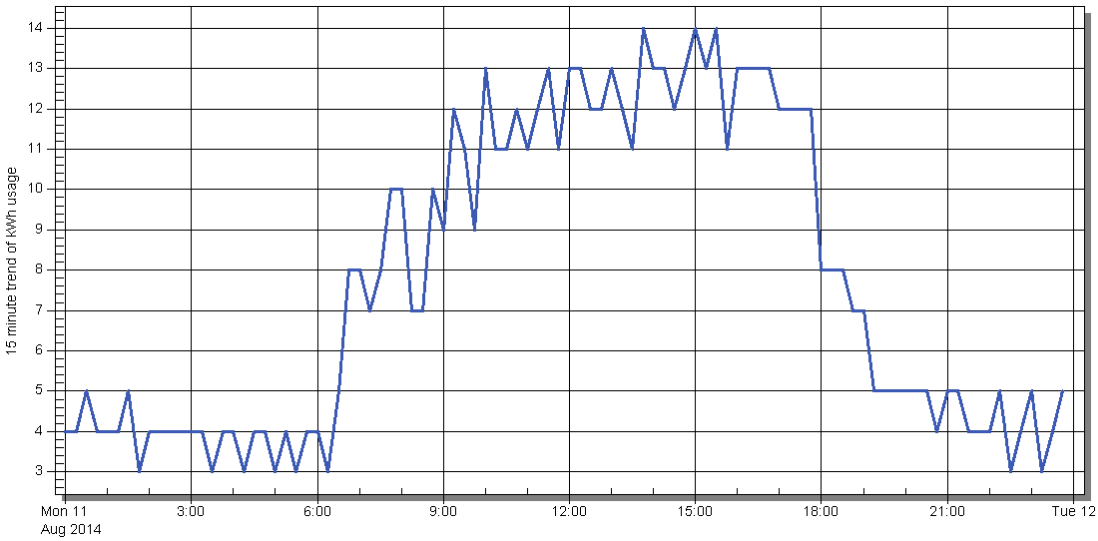
Main Building : 1800ShamesDr

Total Usage during Peak Day
Monday, August 11, 2014

Total Usage	741
Peak Usage	14

Figure 2.3





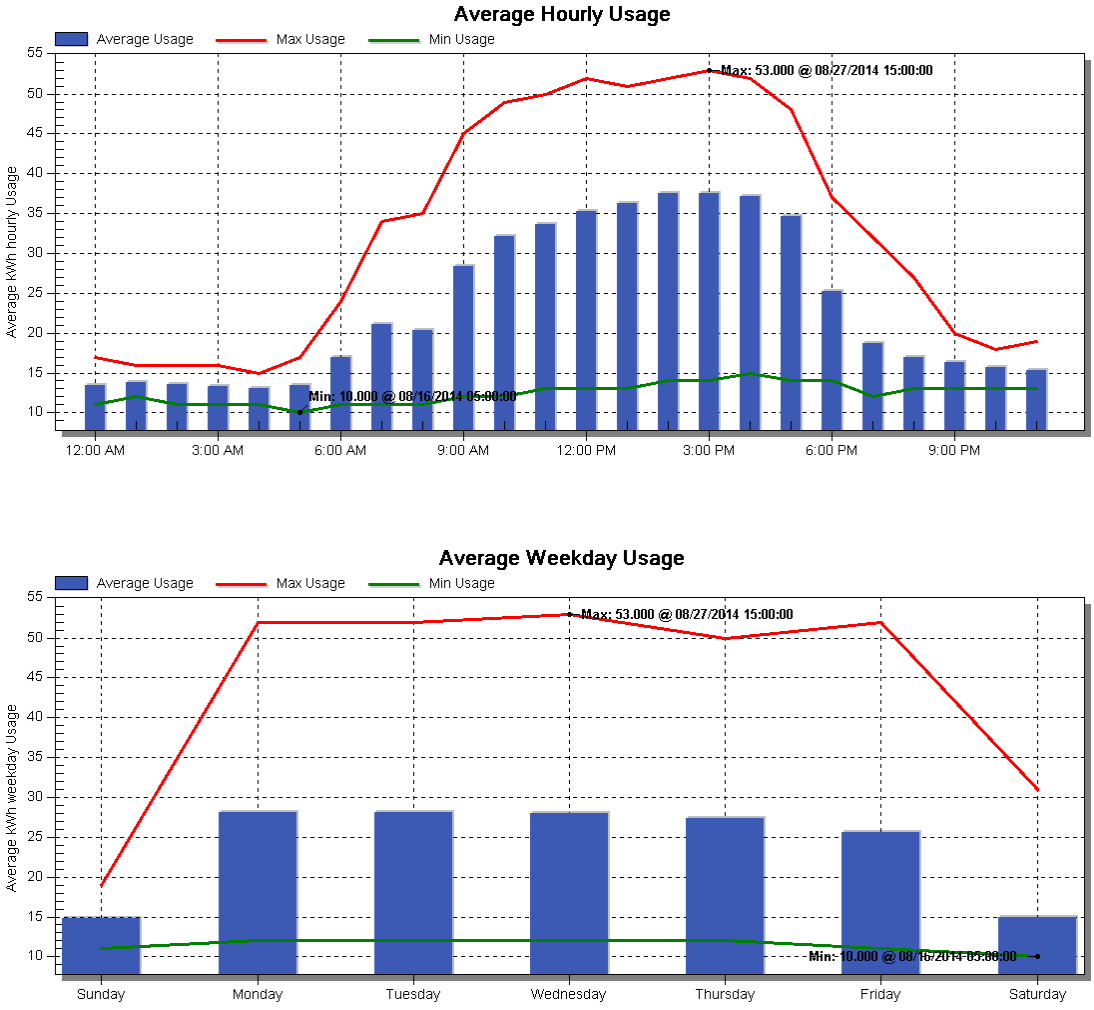
Main Building Total usage during Peak day

Main Building : 1800ShamesDr

Average Hourly and Daily Usage

Displays the average usage over the course of the month, averaged by hour, and by weekday. The highest and lowest usage for each hour and weekday over the course of the month are determined, and displayed as the bounding lines in Red and Green.

Figure 2.4



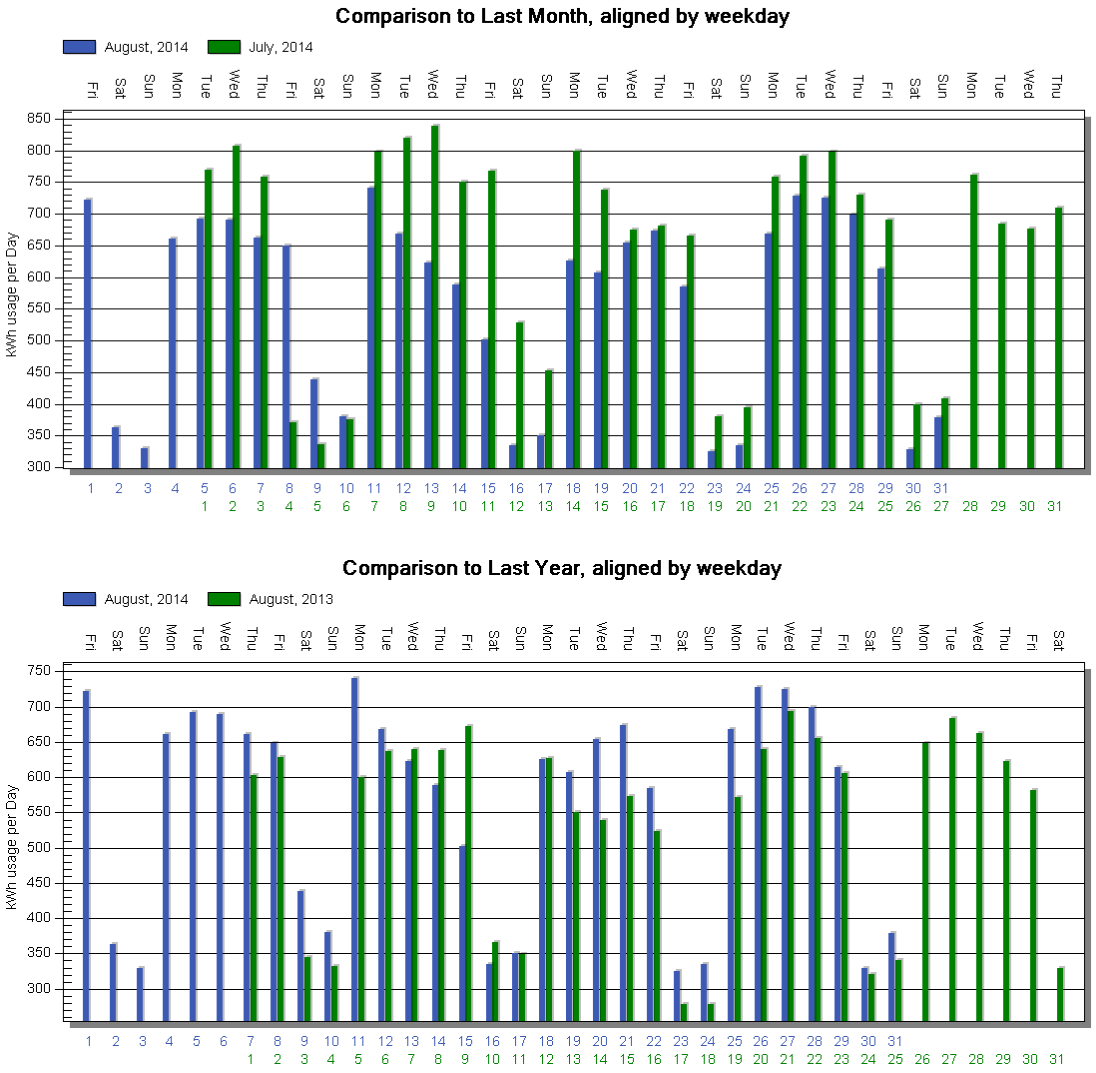
Main Building Average hourly and daily usage

Main Building : 1800ShamesDr

Comparison to previous Month and Year

Displays a comparison of daily usage between this month and last month, and this month this year and this month last year. The daily usage is lined up by week day for each month. The numbers at the bottom indicate what day in the month each bar represents: The top value is the current month, the bottom value the month being compared against.

Figure 2.5



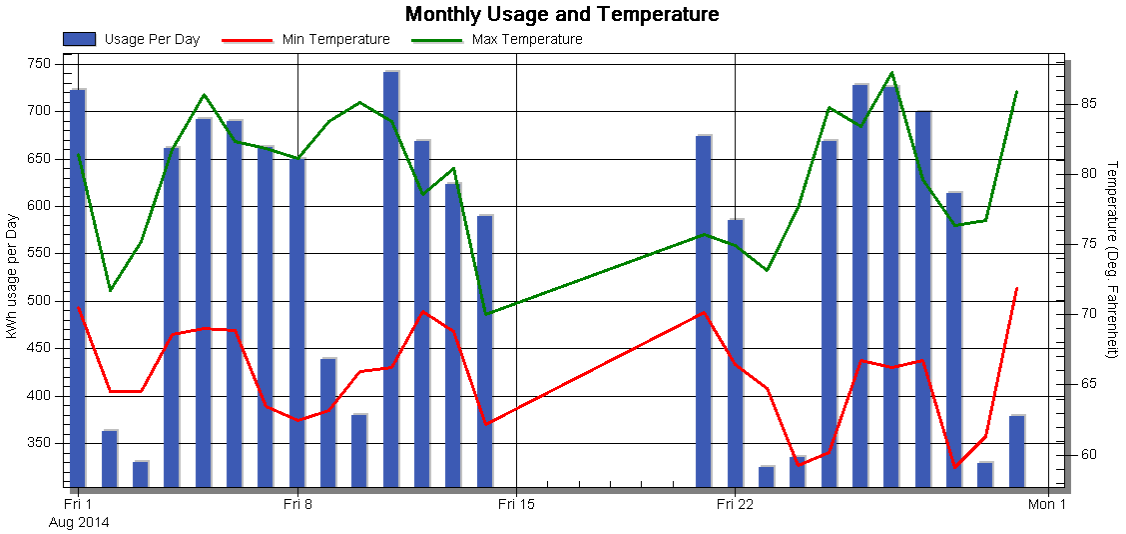
Main Building Comparison the previous month and year

Main Building : 1800ShamesDr

Monthly Usage and Temperature

Displays a comparison of monthly usage and temperature. The highest and lowest temperature for each day over the course of the month are determined, and displayed as the bounding lines in Red and Green.

Figure 2.6



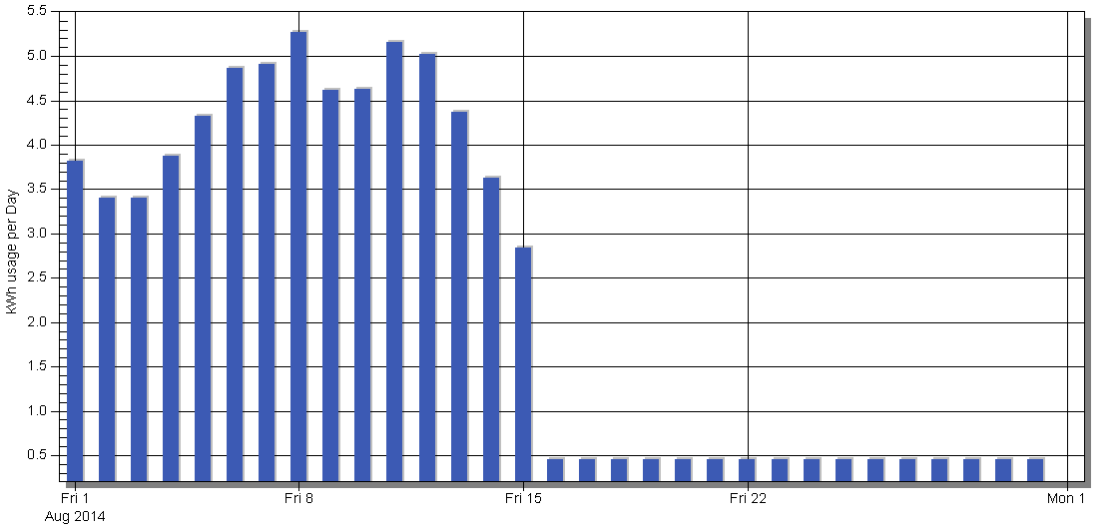
Main Building Monthly usage compared to temperature

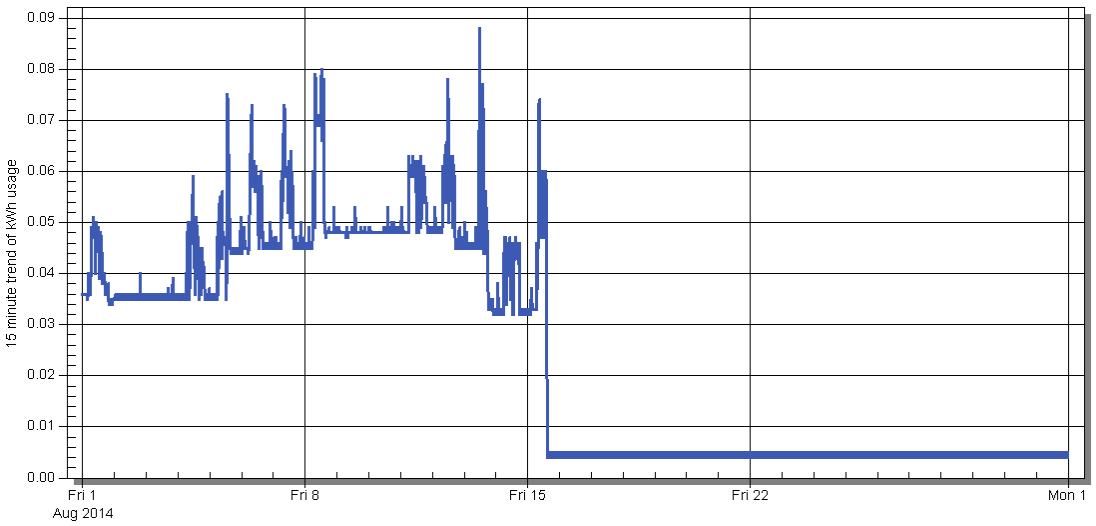
Main Building : Cubicle 1

Total Usage during Month
08/01/2014 to 08/31/2014

Total Usage	71
Peak Usage	0
Peak Demand	0

Figure 3.1





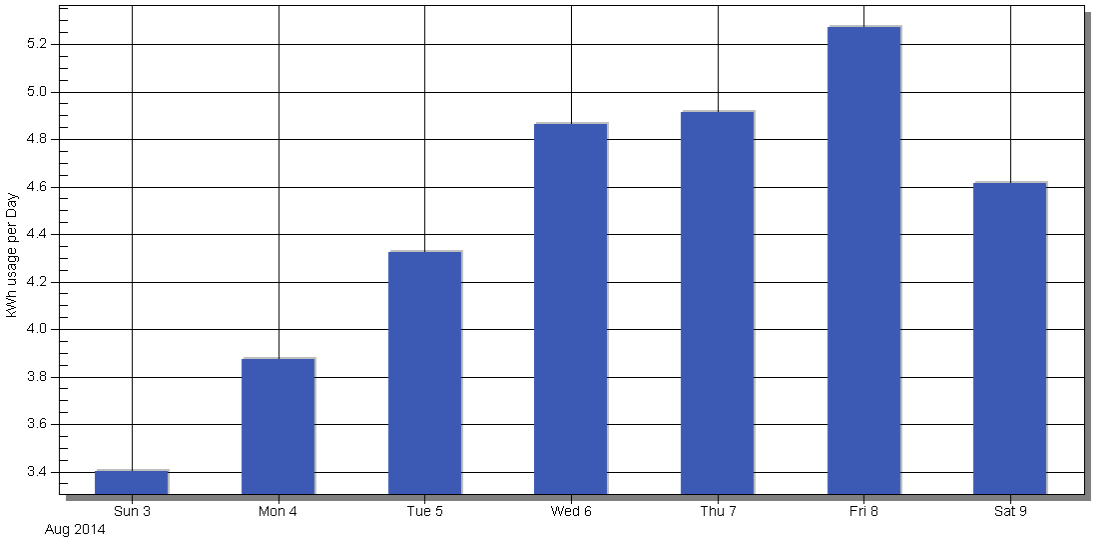
Meter 1 Total usage during month

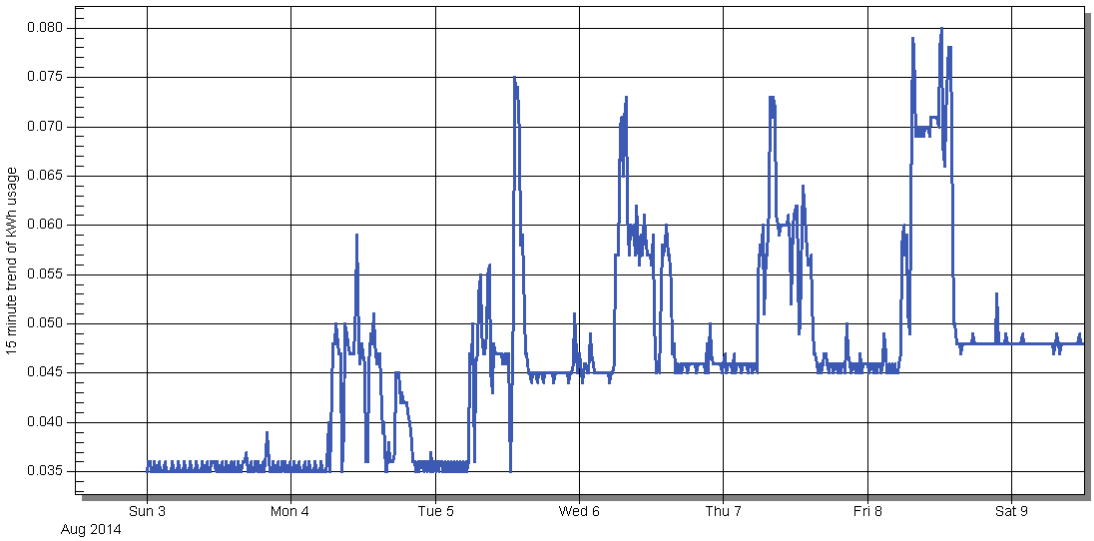
Main Building : Cubicle 1

Total Usage during Peak Week
08/03/2014 to 08/09/2014

Total Usage	31
Peak Usage	0

Figure 3.2





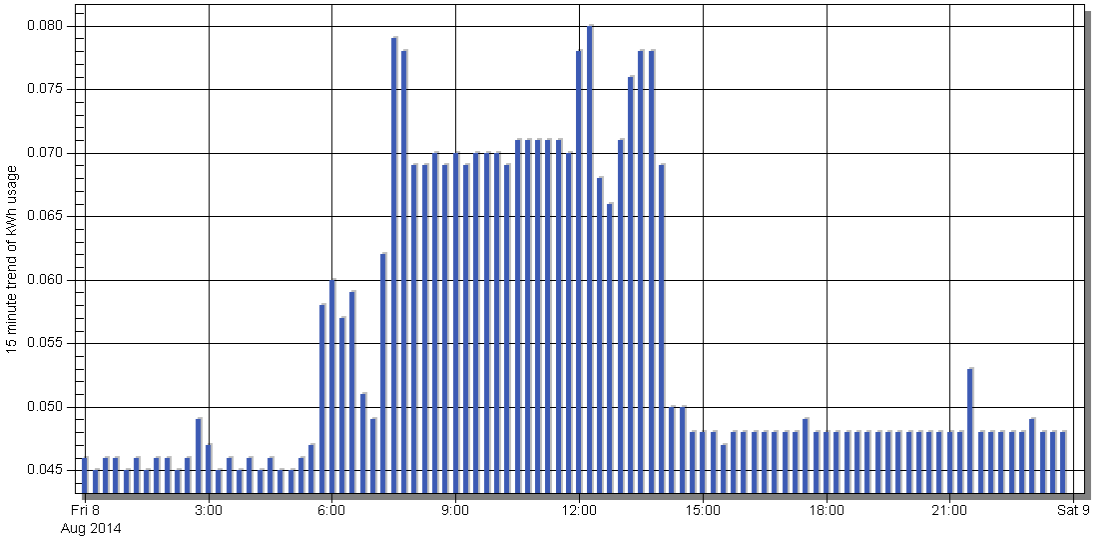
Meter 1 Total usage during Peak week

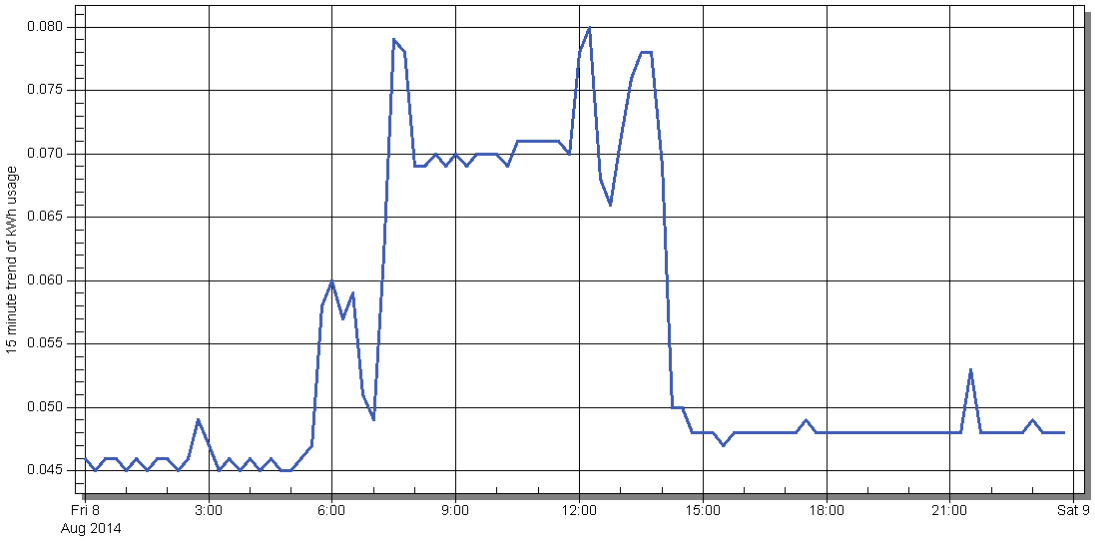
Main Building : Cubicle 1

Total Usage during Peak Day
Friday, August 08, 2014

Total Usage	5
Peak Usage	0

Figure 3.3





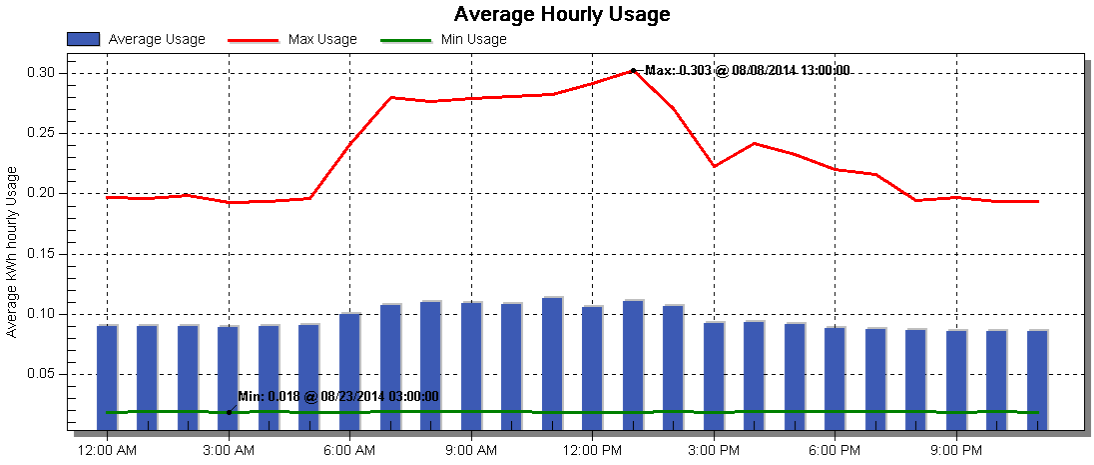
Meter 1 Total usage during Peak day

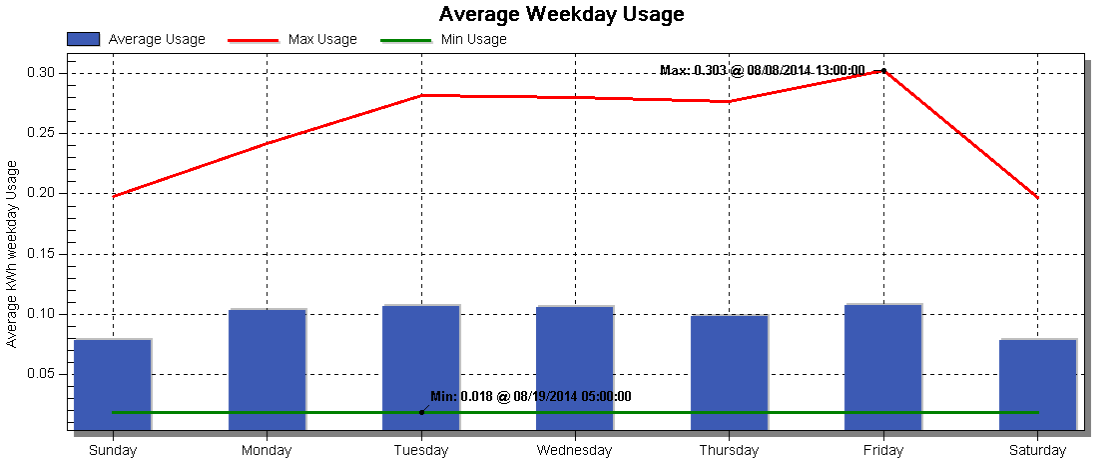
Main Building : Cubicle 1

Average Hourly and Daily Usage

Displays the average usage over the course of the month, averaged by hour, and by weekday. The highest and lowest usage for each hour and weekday over the course of the month are determined, and displayed as the bounding lines in Red and Green.

Figure 3.4





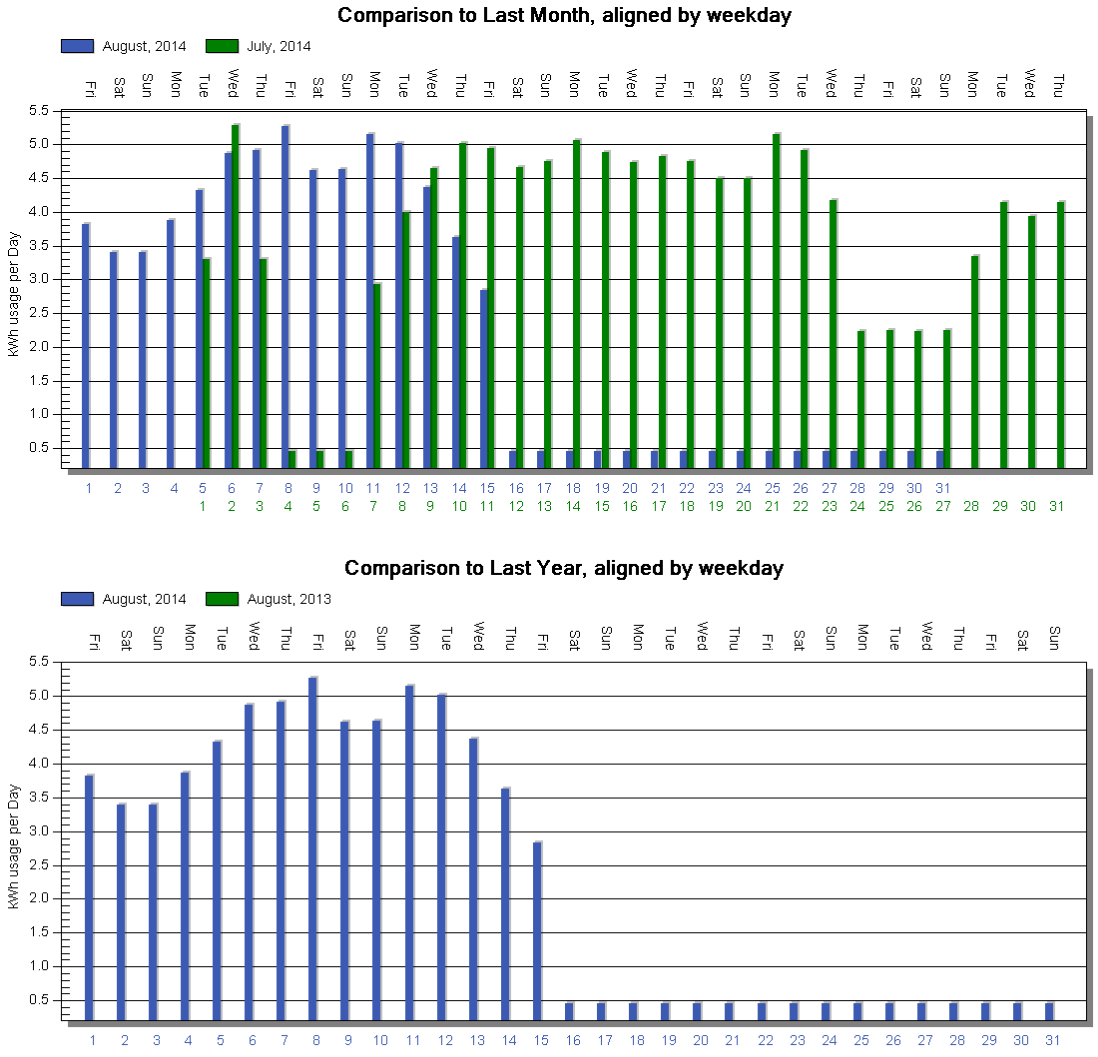
Meter 1 Average hourly and daily usage

Main Building : Cubicle 1

Comparison to previous Month and Year

Displays a comparison of daily usage between this month and last month, and this month this year and this month last year. The daily usage is lined up by week day for each month. The numbers at the bottom indicate what day in the month each bar represents: The top value is the current month, the bottom value the month being compared against.

Figure 3.5



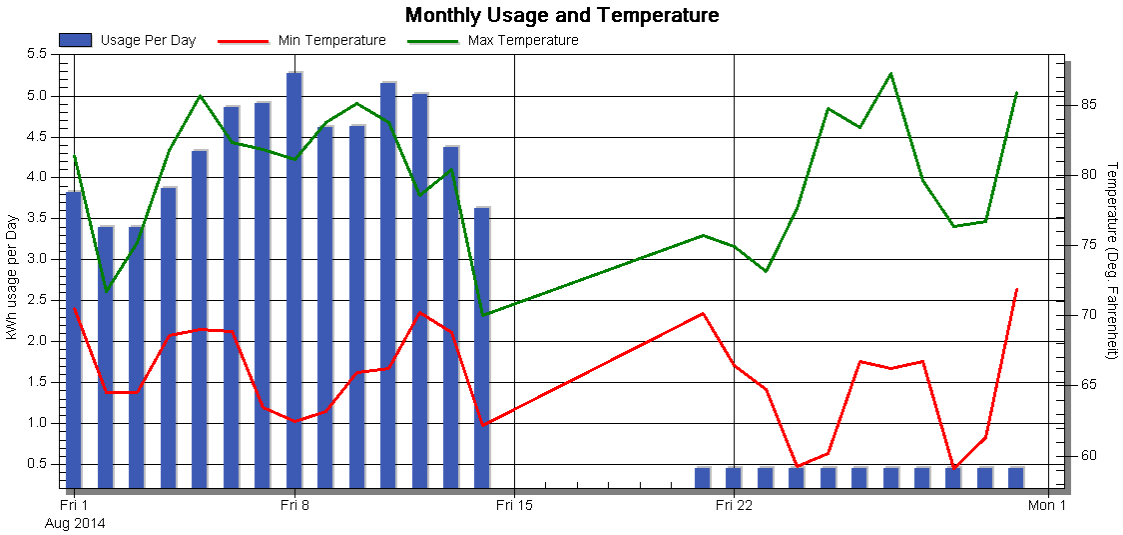
Meter 1 Usage comparison to previous month and year

Main Building : Cubicle 1

Monthly Usage and Temperature

Displays a comparison of monthly usage and temperature. The highest and lowest temperature for each day over the course of the month are determined, and displayed as the bounding lines in Red and Green.

Figure 3.6



Meter 1 Monthly Usage compared to temperature

After this, the same graphs are shown for the remaining meters.

Glossary

<pg_data>		The data directory for the PostGreSql database cluster for the EnergyReporter EXT application. This is the "<Common Application Data>\Electro Industries\Server\PostGreSql\8.4\Data" directory.
	For Windows® XP:	This is typically "C:\Documents and Settings\All Users\ApplicationData\ElectroIndustries\ Server\PostGreSql\8.4\Data".
	For Windows® 7:	This is typically "C:\ProgramData\ElectroIndustries\Server\PostGreSql\8.4\Data".
<pg_exe>		The directory which contains the PostGreSql Database Server executable. This is typically "<Program Files>\Electro Industries\Server\Post GreSQL\8.4".
EnergyReporter Settings Editor		The EnergyReporter Ext software for administering the Billing Package, including location configuration, data import, rate configuration, and modifying data values.
Bill Structure		Another name for Rate Structure.
EnergyReporter Dashboard Viewer		The EnergyReporter Ext software for generating bills, viewing bills, and trending the data values.
Billing Database		The internal storage on the database cluster which holds all the data imported from the meters.
Channel		A single type of data item, such as kWh or pulses.
Charge		A monetary value applied to the bill, outside of the normal usage. This includes things such as a peak demand charge, credits, and taxes.

Commodity	A type of channel (typically from Energy or accumulations) which is a usage value the software uses when computing the rates for a bill.
Customer	The person or organization which is receiving the bill. A customer may have multiple locations, each of which gets its own bill.
Database Cluster	The collection of databases which the Database Server provides access to. A database server may provide access to multiple database clusters.
Database Server	The combination of computer and process that provides the interface to the database cluster (currently PostGreSql 8.4).
EnergyReporter Ext	The package of software which includes EnergyReporter Settings Editor, EnergyReporter Dashboard Viewer, and the Database Server.
Import Location	The actual source of the data imported for the meter. This is typically a log file, such as an HMI Ext™ .dbf file, or a Communicator Ext™ .db log file. This file is scanned when imported, and new data is placed into the billing database.
Location	A single unit for which a bill is generated. Each location may have its own set of meters and rate structures.
Meter	A data monitoring unit, which acts as an import point for collecting usage data. Each meter may have multiple channels, but only one channel can be assigned to a commodity at a time. When multiple meters are at a single location, the matching usage values are aggregated when generating the bill.

Provider	The person or organization which is providing the energy, sending the bill, and receiving payments.
Rate	The monetary value applied to the usage which occurs during specific periods.
Rate Structure	The collection of settings which determine what rates to apply to the usage values for a commodity. Includes calendar rates (such as on peak and off peak), holidays, and other charges.

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